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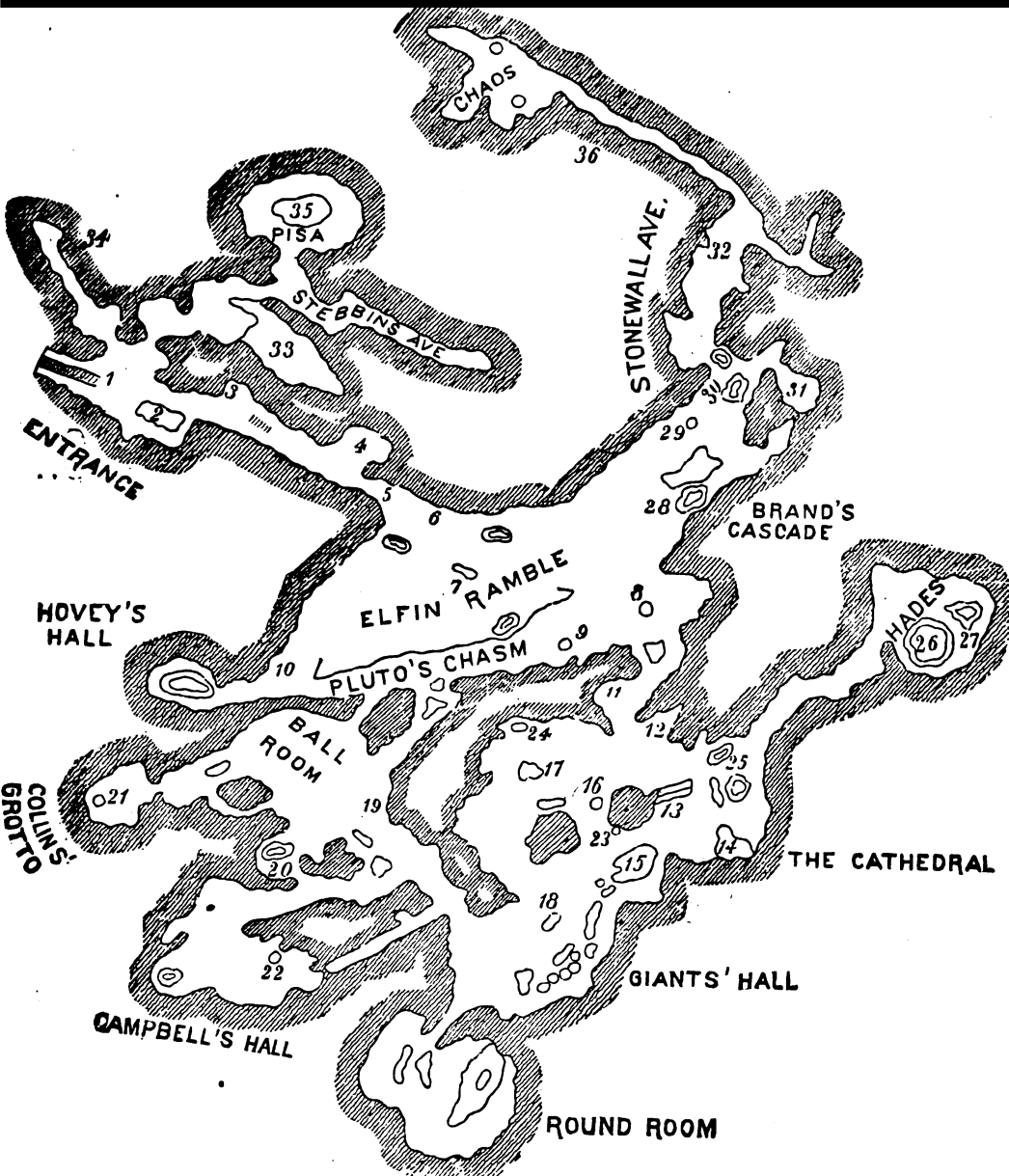

The caverns of Luray

Samuel Zenas] [Ammen, Norfolk and Western Railroad Company, Valley Land and Improvement ...

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From Lemuel Zerkel
Luray, Va.
Thru Prof. J. P. Russell
Nov. 16 94

The Caverns of Luray

URAY.

NORFOLK and WESTERN Railroad

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MANSION INN,

Luray, Virginia,

Presents to the Traveling Public,

Splendid Accomodations, **Four Seasons in the Year.**

A CITY HOTEL IN A COUNTRY TOWN.

Appointments Modern and Complete.

Supplying with credit the sorely felt loss of the beautiful LURAY INN. Every possible care is taken to afford the best service in every particular to visitors to the Caverns. Every arrangement being made for their comfort and convenience at the Hotel Office. Rates $2 to $2.50 per day, $10 a week.

This house stands fully abreast of the times, having made rapid strides in popular favor during the very short space of its career.

In the Fall of 1891, The Luray Inn burned, creating a demand for a New Hotel, which is supplied by the opening of the MANSION INN.

Our patrons find in winter a delightful temperature, the house being heated by steam. The electric call bells, hot and cold baths with other modern comforts and conveniences, render it complete.

In summer a pretty lawn decorated with flowers, and beautiful shade trees, affords a restful retreat, commanding a beautiful view of the Blue Ridge Mountains, which culminate in scenes of natural granduer at this point.

Hotel Omnibus meets all trains.

The Proprietor of the MANSION INN is also Proprietor of the Transfer Line to the Caverns.

CAMPBELL'S conveyances attend all trains for the transportation of Cave Visitors, and this service is rendered at figures endorsed by the Cave Co., being a protection against irregular charges. For further information, address

WALTER CAMPBELL,
Proprietor Mansion Inn
and Luray Cave Buss Line.

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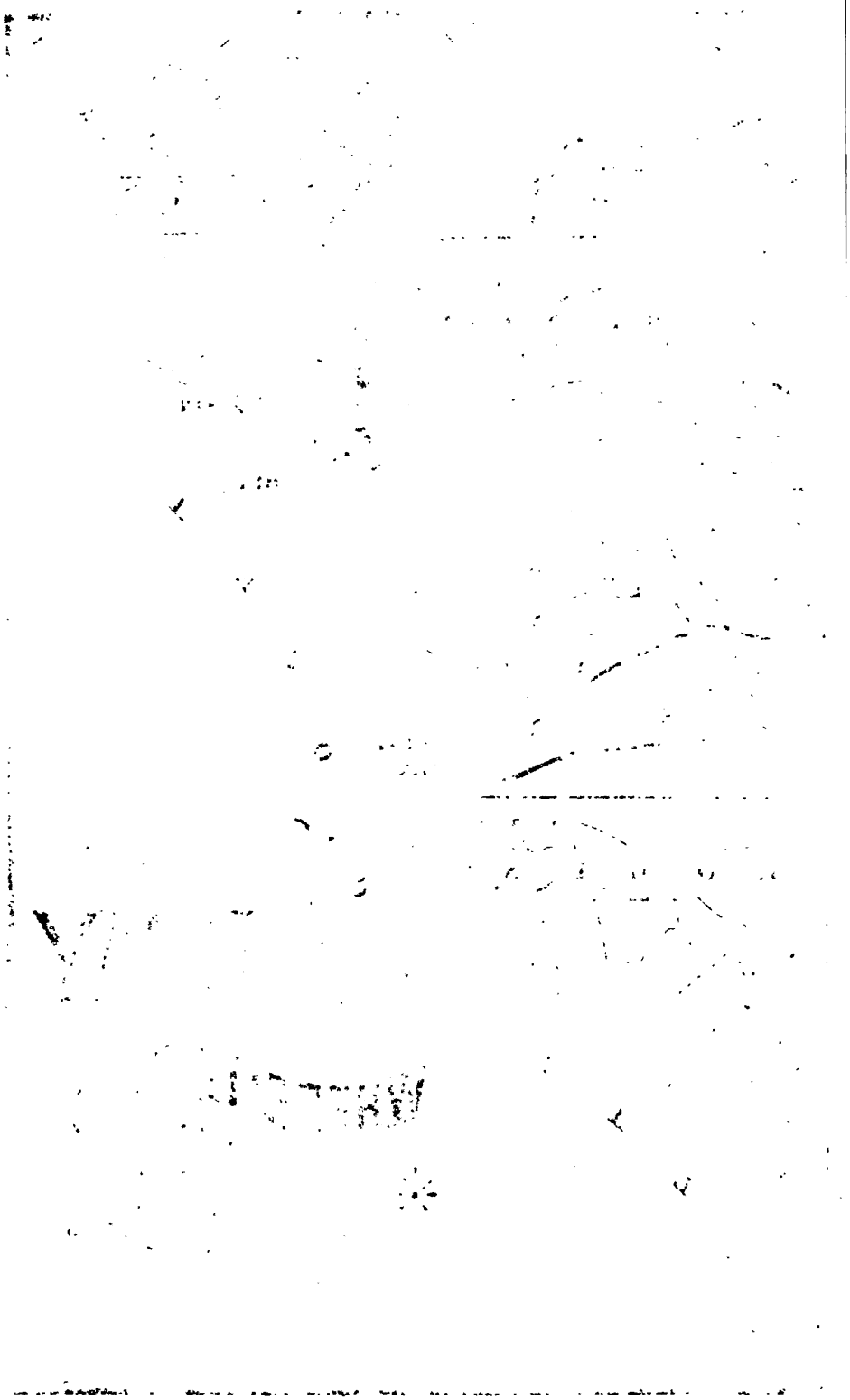

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Norfolk and western railway company.

• THE •
CAVERNS OF LURAY.

44

THE PROPERTY OF

THE VALLEY LAND AND IMPROVEMENT CO.,

LURAY, VA.

The Manner of their Formation,
Their Peculiar Growths,
Their Geology, Chemistry, &c.

AN ILLUSTRATED GUIDE-BOOK.

BALTIMORE:
CROWL & LEHNER, PRINTERS,
23 Light Street, Cor. Mercer.
1893.

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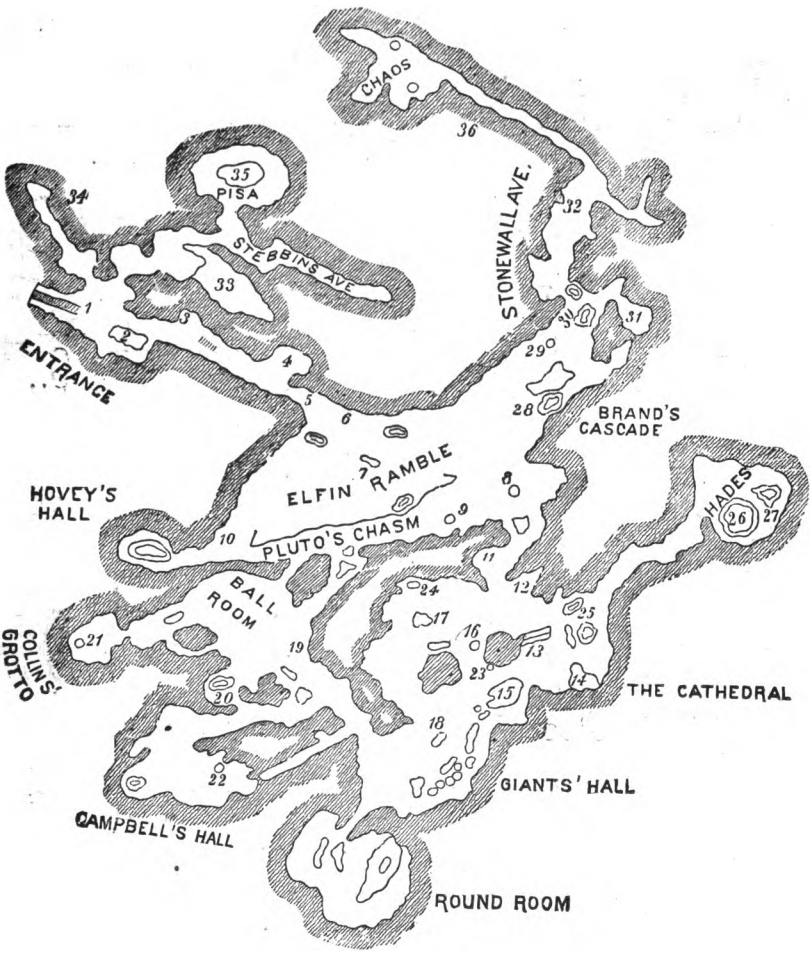

MAP OF THE CAVE.

1, Entrance Hall. 2, Washington Column. 3, Vegetable Garden. 4, Theatre. 5, Natural Bridge. 6, Fish Market. 7, Crystal Spring. 8, Proserpine's Column. 9, The Spectre. 10, The Balcony. 11, Oberon's Grotto. 12, Titania's Veil. 13, Saracen's Tent and Fallen Column. 14, Organ and Throne. 15, Tower of Babel. 16, Empress Column. 17, Leidy Column. 18, Henry-Baird (or Double) Column. 19, Chalcedony Cascade. 20, Coral Spring. 21, The Dragon. 22, Scale Column. 23, Helen's Scarf. 24, Wet Blanket. 25, Chapman's Lake. 26, Broaddus Lake. 27, Castles on the Rhine and Lake Lethe. 28, Imperial Spring. 29, Skeleton. 30 Twin Lakes. 31, Engine Room. 32, Miller's Room. 33, Hawes' Room. 34, Specimen Avenue. 35, Leaning Tower. 36, Proposed Exit Avenue.

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THE CAVERNS OF LURAY.

"All are but parts of one stupendous whole."—*Pope.*

ITS HISTORY AND SURROUNDINGS.

THE GREAT VALLEY OF VIRGINIA lies between two elevated ranges—the Blue Ridge on the southeast rising to heights of from 2000 to 4000 feet above tide-level, and the North Mountain range on the northwest almost equally high. It is not a continuous plain like some of the Western prairies. On the contrary it is of varied surface, a land of hill and dale, well watered, fertile, and abounding in every variety of mineral and agricultural wealth. Nor is it a single valley throughout. From a few miles southwest of Winchester to a point nearly opposite Harrisonburg it is divided into two subordinate valleys by the Massanutton Mountain—a long belt of ridges of silurian and devonian rocks which withstood the denuding agencies that cleared away on either side so many hundreds of square miles of strata.

Both valleys are proverbial for their beauty and famous for important historical events, of which each has been the scene, but our present concern is with the eastern and narrower one, the Luray Valley. This constitutes Page County, of which Luray (at 822 feet above sea-level) is the county seat. For the lover of the beautiful in nature it is endowed with innumerable charms. Hemmed in on every side with a rim of blue mountains, it is traversed in its western part by the South Branch of the Shenandoah, a beautiful river known in many a story of battle and guerilla adventure during the civil war. It was upon its banks at Front Royal, near its junction with the North Branch, that the first battle of Jackson's famous Valley campaign was fought.

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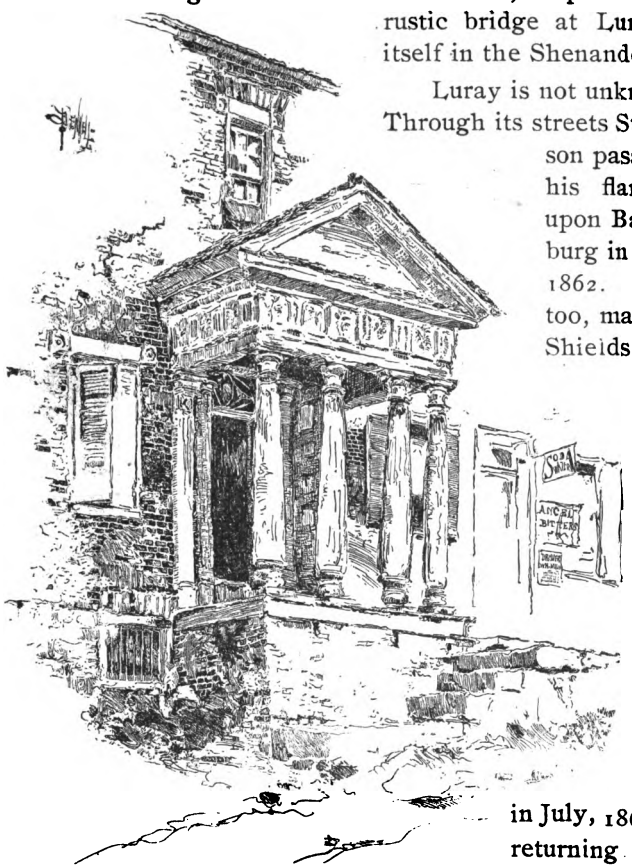
The Hawksbill, a winding and picturesque stream, flows through the centre of the valley, alternating along its upper course with wild mountain cascades and bits of bosky dell, until at length, after watering miles of fertile meadow, it passes beneath the rustic bridge at Luray and loses itself in the Shenandoah.



ON THE MAIN STREET.

Luray is not unknown to fame. Through its streets Stonewall Jackson passed in making his flank movement upon Banks at Strasburg in the spring of 1862. By this way, too, marched General Shields a little later, to intercept the wily Confederate in his retreat before Fremont. After the affair at Port Republic, Luray lay in the line of the Federal general's retreat. Again, in July, 1863, Lee's army returning from Gettysburg to Eastern Virginia, and finding the lower passes of the Blue Ridge held by Meade's troops, came this far up the valley to gain Thornton's Gap, and crossing here, once more confronted its old adversary. Then, as now, the valley was famous for its pretty girls and abundant rations, to both of which soldiers are ever devoted, and it became in consequence the scene of many exploits of the partisian soldiery of Harry Gilmore, White, McNeil, and Mosby—gay fellows who were loath to yield possession of so charming a place.

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About a mile west of Luray, near the Newmarket pike, is a conical hill, long known as cave Hill from the existence of a cave* near its summit. At its base is a large depression filled with water. Along its sides, here and there are sink-holes, marked with a growth of briar and weeds, known to vagrant boys as the haunts of rabbits. Their more important significance was not understood, however, until after the arrival in April, 1878, of Mr. B. P. Stebbins, a photographer of Easton, Md., who induced several of the towns people to join him in the search for an undiscovered cave which, from surface indications, he felt sure must exist in the neighborhood. With his companions in this memorable hunt he prospected about the country, digging here and there at promising localities but without success, until, being nick-named "cave-rats," they became the objects of good natured riducule from their fellow-townsmen, who charged them with mistaking rabbits' hiding places for mares' nests, and jumping rabbits for sprightly young colts.

At length, on the 13th of August, 1878, they examined a depression on the hillside, about forty feet in diameter by ten in depth, filled with loose stones and brush, and grown up with weeds. Removing these obstructions with considerable labor, they found an opening from which a current of air was escaping, The opening was further enlarged; Mr. A. J. Campbell was lowered by means of a rope, and reaching the bottom, candle in hand peered about him. He found himself in a narrow rift about fifteen feet long by five wide, with no apparent outlet. Closer examination disclosed a hole through which with some difficulty the discoverer of the Caverns passed into the large open space now known as Entrance Hall. Having abandoned the rope which connected him with his companions, he for some time contemplated with rapt interest the strange scene presented to his eyes, until—the rest of the party becoming alarmed at his absence—his nephew William B. Campbell followed in search of him. The importance of their discovery was appreciated, and at night the party returned with candles and explored Stebbins' Avenue, Entrance Hall, and Entrance Avenue as far as Muddy Lake, since drained and replaced by a dry, cement walk. The

*Discovered in 1795 by Ruffner, a famous hunter and pioneer, who was afterwards killed in combat with the Indians. On May 7th, 1825, new discoveries were made by a party of fifteen gentlemen from Luray, who penetrated a distance of half a mile, reaching (it has been inferred from their descriptions) Hades and other portions of the "new cave" of Stebbins and Campbell.

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lake—then a considerable body of water—stopped them, and of the largest and grandest part of the cave they remained in ignorance, until, on a venture, they had purchased the land under which it lay.

Soon after its discovery the tract of land overlying the cave, and containing twenty-eight and one-half acres, was sold by order of the county court at auction, to close up a bankrupt estate, and Messrs. Stebbins, Campbell & Co. became the purchasers. The price paid was double what the land had brought at a previous sale. It was considered by persons not in the secret a bad bargain, as the soil is light, consisting of a thin clay strewn with fragments of quartz, while the hillside is disfigured with sinkholes and masses of lower silurian limestone projecting in horizontal strata from the surface.

A few days later, however, the town was electrified by the announcement of the discovery of a wonderful cave. The commotion was immense, and when the nature of the property with which they had parted became known, relatives of the original owners instituted suit for its recovery. The decision of the local court was in favor of the purchasers, but the case was carried to the State Court of Appeals, and was there, in the spring of 1881, decided in favor of the plaintiffs. It had scarcely been decided when the Luray Cave and Hotel Company, related in interest to the Shenandoah Valley Railroad Company, (now the Norfolk & Western R. R. Company) purchased the cave. Other bodies of land adjoining have since been added to the original tract until property exceeding the whole area overlying the cave, and several times the extent of the original "cave tract" now belongs to the present owners.

Luray is a good central point from which to visit the numerous battlefields of the Valley and Piedmont region of Virginia. Within a few miles are Kernstown, Front Royal, Winchester, Strasburg, New Market, Cedar Creek, Cross Keys, and Port Republic. Charlestown, the scene of John Brown's trial and execution, is in easy reach. There are several interesting mounds, built perhaps by the famous mound-builders, within two or three miles of Luray. For several years representatives of the Smithsonian Institution have been engaged in examining them.

Luray is within easy reach of Rawley, Capon, and Jordan White Sulphur Springs, and is on the direct line from northern cities to the famous Greenbrier White Sulphur, Old Sweet, Red

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Sweet, Warm Springs, and other prominent Virginia watering-places, and the wonderful Natural Bridge of Virginia.

Since its opening, the cave has been visited by many thousands of persons from all parts of the world, many of them scientists and foreign tourists acquainted with the caves of this and other countries. The records show that 1468 visitors have entered the cave in one day. The general verdict is that the Luray Cave excels all others in the combined extent, variety, scientific interest, and beauty of its calcite fromations. The Mammoth and Wyandotte Caves are indeed larger, but their walls are al-

GOING TO THE CAVERNS.

most bare. Neighboring caves to that of Luray are admittedly inferior in the freshness, extent, and beauty of cave scenery, the richness, variety, and abundance of ornamentatian to which the Luray Caverns owe their pre-eminence, and in extent, as well as in ease of access. The Adelsburg Cave, in Austria, near Trieste, is the only cave in the world that approaches Luray in these respects. For the latter it may be claimed that it is the most beautiful known.

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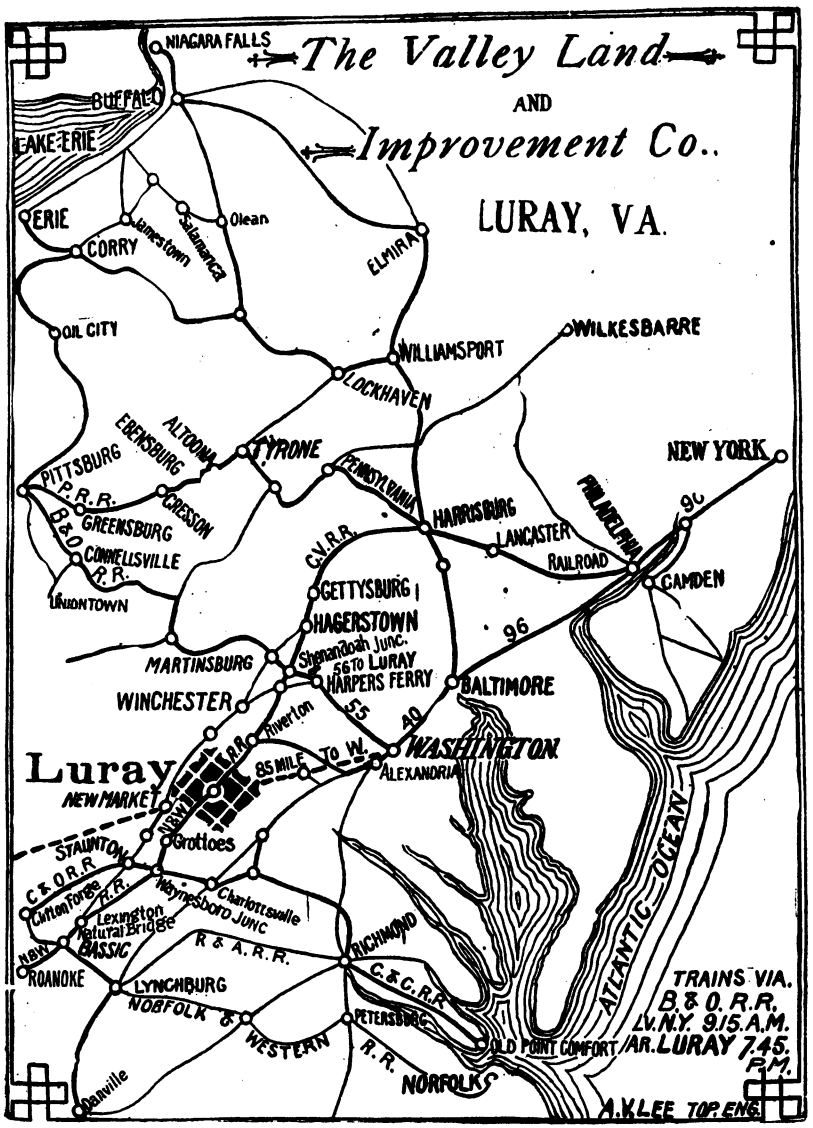

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"Comparing this great natural curiosity with others of the same class," says the report of a party sent out from the Smithsonian Institution, "it is safe to say that there is probably no other cave in the world more completely and profusely decorated with stalactitic and stalagmitic ornamentation than that of Luray."

"The Century" magazine of January, 1882, speaks "of the ornamental formations of crystalline rock, which render this cave without a peer in the world, perhaps, for the startling beauty and astonishing variety of its interior."

"Harper's Weekly," January 11th, 1879, published the first illustrations made from sketches, furnished by Alexander Y. Lee, who was the first artist to visit the caverns and to give the views to the world.

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A CHAPTER OF EXPLANATION.

Scopulis pendentibus antrum:
Intus aquæ dulces, vivoque sedilia saxo,
Nympharum domus!

Geologically, the limestone (dolomite) in which the cave is found, is to be assigned to the "Canadian" or Middle Period of the Lower Silurian, and to the "Quebec" the Middle Epoch of that period—to No. II. of Rogers' series.

The stratum* of argillaceous limestone constituting Cave Hill may be considered identical with that in which occurs the famous Natural Bridge of Rockbridge County, near Natural Bridge Station, Shenandoah Valley R. R., farther up the valley. Such was the opinion of Prof. John L. Campbell, of Washington and Lee University, who made a minute study of this region, and is recognized as the highest authority upon the geology of the Valley of Virginia.

Large caves are found only in limestone Regions. Those who give the subject special study agree that a cave is but an underground valley—a ravine roofed with stone—a repetition, on a small scale and under a stony sky, of the main features of limestone scenery above ground. This view is well sustained by the structure of the Luray Caverns. They are a system of large ravines, of which (1) Entrance and Stonewall Avenue, (2) Pluto's Chasm, and (3) Giants' Hall and its dependencies, are the dominating lines. It is one thing, however, to have subteranean ravines, and quite another to have them richly decorated with beautiful formations. The growth of stalactites, stalagmites, columns, &c., requires the fulfillment of so many conditions, that while caves are common the world over, beautiful caverns are rare.

The hill, near the summit of which the caverns are situated, is the highest in the vicinity. The strata are horizontal, compact, homogeneous, and almost water-tight. Had "Cave Hill" been subject to the rain torrents flowing from higher hills and had its strata been inclined, water would have flowed through any chance opening too fast to have produced effects other than those due to mere erosion. As it is, the water which enters the

*Prof. Campbell considers this stratum much older than the Trenton strata, a wellmarked epoch intervening.

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cave seemes to exude from the very stone itself, as if it had under pressure traversed the whole thickness of limestone overhead.

The caves of limestone regions result from an action which is explainable by the chemical fact that the carbonates of lime and magnesia are soluble in water containing carbonic acid, which is abundant in atmospheric air and is one of the products of the decomposition of animal and vegetable matters, so that rain water which has percolated through the soil has usually been enriched with it from both sources. With carbonic acid, then, as the active agent and water as the carrier (any one may observe their action upon the marble slabs of "soda" fountains), we are able to account for the disappearance of strata, however thick, and whether above or below ground. Above ground the result is a lowering of the general level, the deposition of a residual stratum of clay (a constituent, in a finely divided condition, of the valley limestone), and the formation of valleys where special causes have favored the disintegration of the stone. "Hard" water flows away, and a clay soil is left behind. Below ground, on the other hand, the result is a cave—if there be a vertical fissure in the strata through which the acidified water may make its decent. In the course of time this fissure is worn larger, and the entering water, accumulating in pools, disolves and disintegrates the the softer horizontal strata with which it comes in contact. Then, finding an exit, it bears away with it bit by bit the minerals with which it is saturated, flowing out at some lower level with its burden of lime and magnesia, but leaving the clay behind to plague the adventurous cave-hunter. A cave therefore is a fissure widened by the combined action of carbonic acid and water.

So much for the solution and removal of strata. It remains to account for the new formations, which, under the names stalactite, stalagmite, drapery, &c., are peculiar to cave scenery. Some caves have them; some have not. They demand certain conditions of comparative dryness and ventilation which are seldom realized. The chemist knows that water holding lime in solution by virtue of the carbonic acid it contains, will deposit the lime when the acid escapes. It is obvious, moreover, that when water containing dissolved lime and magnesia is evaporated by a passing current of air, the solid matter will be left behind, and crystals small or large be formed, according as the evaporation is rapid or slow. The formation of a limestone

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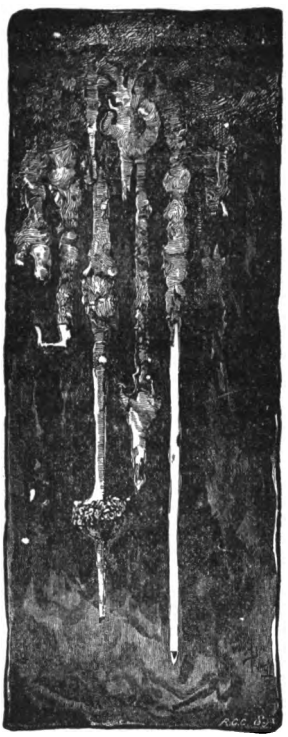
coating at the bottom of a kettle in which "hard water" has been boiled is a somewhat similar phenomenon.

FORMATIONS.—Cave formations, when new, are white from the predominance in their composition of lime and magnesia. In the course of time, however, much of the soluble matter of their surface is removed by the ever-present carbonic acid and moisture gathered from the cave atmosphere, and the residual clay and iron oxide accumulating on their exterior give it a darker color.



STALACTITES AND HELICTITES.

The formations at Luray are to be referred to the following types:—

1. *Stalactite*.—It begins from a drop suspended from the ceiling. The carbonic acid escaping and the water evaporating, the drop becomes more concentrated at the surface than at the pendent centre, and deposits the solid matter it contains as a ring of tiny crystals. This ring now becomes the support of the drop, and the process continues until a tube of the diameter of the drop and from one to thirty-six inches in length is formed. Before reaching this length, however, it begins commonly to fill up, and the water now trickling exteriorly deposits its solid matter and enlarges it. Stone cloth, "curtains," "swords," "draperies," &c. are its varieties. Hanging from the under surface of a jutting ledge, a stalactite receives its supply of stone-forming water on one side only and grows only on that side. Thus from being a round body it becomes a flat one. Extending horizontally as it broadens, it must chance to intersect the line of growth of similar adjacent formations, and where they meet there is a blending of substance and the semblance of a fold. Stripes of various tints of red result from varying proportions of carbonate of iron in the water which trickles down the growing edge. The stalactite assumes a thousand forms, and one of the chief pleasures of the visitor is to study and account for its wonderful vagaries.

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2. *Stalagmite.*—Meanwhile a growth has been taking place below from the drops which have fallen upon the floor and there deposited their burden of lime, magnesia, clay, &c. The result is a solid column, much larger than its corresponding stalactite. Stalactite and stalagmite often meet in mid-air to form a pillar extending from floor to ceiling.*

3. *Helictite.*—The Luray Cave produces a new and peculiar formation, neither stalactite nor stalagmite, which has been named *helictite*, to indicate the contorted or broken line of growth which it effects. The helictite abandons the vertical line. It prefers to extend horizontally from one to three inches, until it can be free to move in any direction, and then often grows upward, seldom downward.

This eccentric formation is due to a slow crystallization taking place on a surface barely moist, from material conveyed to the point of growth by a capillary movement. The polar forces concerned in crystallization by a happy chance continually getting the better of gravitation, it departs from the vertical line to which cave growths are usually restricted.

4. *Calcite Crystals* are deposited in still water. They are abundant in the cave, forming the sides and bottom of its numerous "springs" and lakes, but should be distinguished from others found protrudin from the blue limestone of the ceiling, the latter having been formed therein long before the period of the cave.

5. *Cave Pearls* are formed about pebbly *nuclei* in water agitated by falling drops. *Botryoids* result when adjacent masses of stone are besprinkled with fine spray. These grape like bodies are fixed, and when old resemble "*vegetable growths,*" but are smaller and have a different origin. The latter are found on old stalagmites disintegrating in a moist atmosphere. *Cascades* lie between stalactites and stalagmites, being formed when water trickles over an incline plane of broad surface. No gypsum formations occur in the Luray Cave.

AGE.—It is impossible to estimate correctly the age of the cave, or of its formations. The cave is, of course, more recent than the hill in which it is formed—is later than the adjacent valleys and streams into which it drains. The rate of growth of cave formation varies with a score of circumstances, so that no

*A "mighty-tight" according to the country dame, whose pun is repeated by Sam Smith, the amiable guide.

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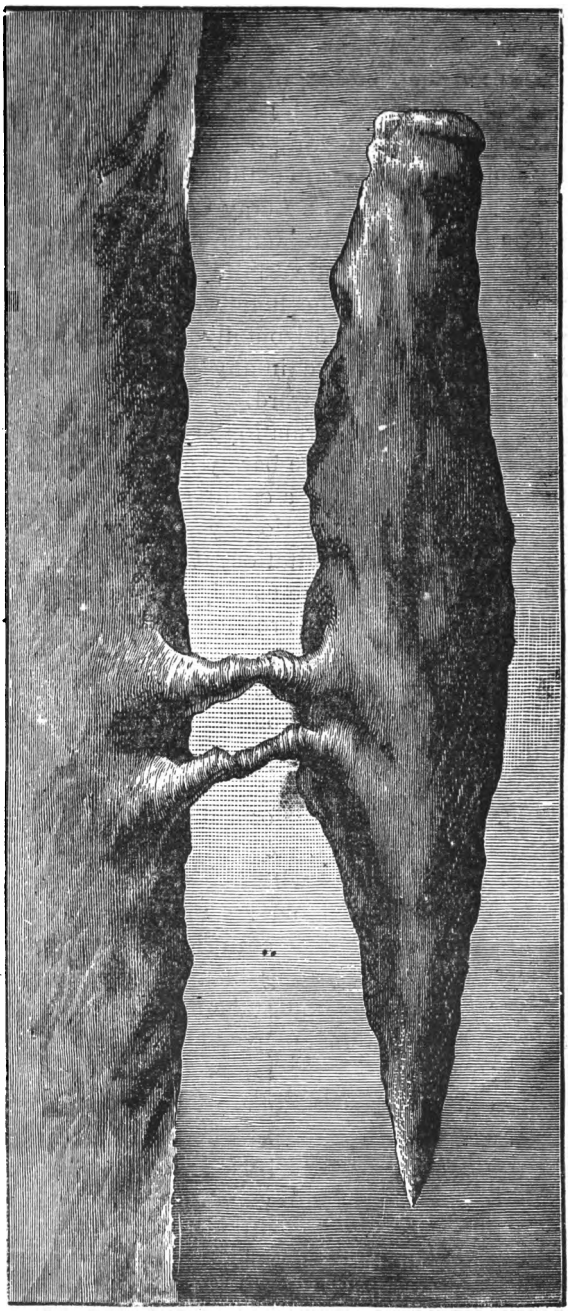
generallya pplicable rule can be deduced. An unexpert estimate was as follows: On an excursion a lady inconsiderately broke off a stalactite the size of a pipe stem. When expostulated with by the guide for thus destroying, in a thoughtless moment, the work, possibly, of ages she repentantly exclaimed: "What a pity! I thought they grew over night." The writer has seen a tumbler which, after standing five years under the drip of a stalactite, was incrusted to a depth of one-eight of an inch. At this rate of growth, supposing all the conditions to be exceptionally favorable, a column one foot in diameter might be formed in two



THE CONICAL SHOT.
A Combined *Helictite*, *Stalagmite*, and *Stalactite*.

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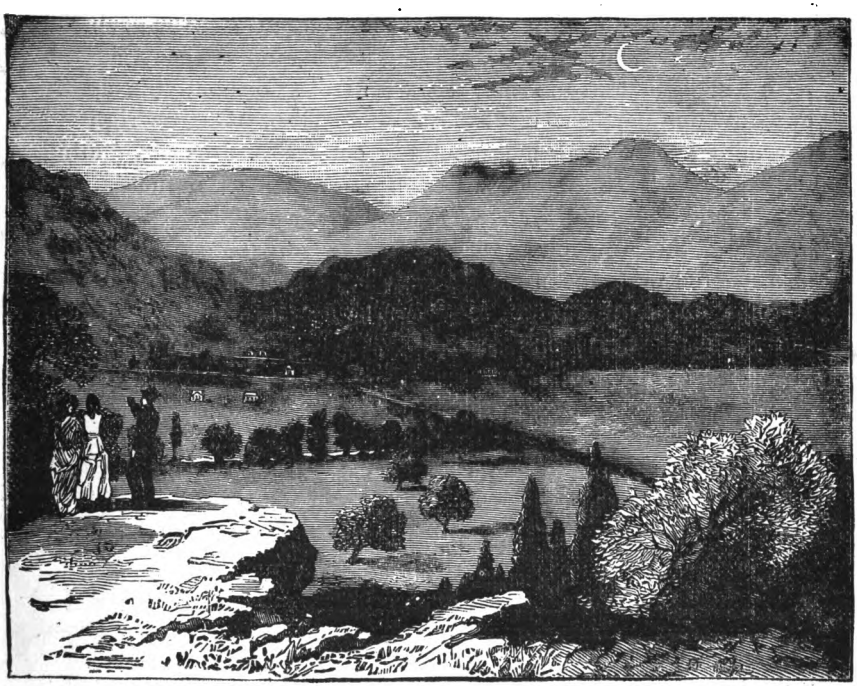
hundred and forty years. Under ordinary circumstances, however, it would, perhaps, require several thousands, some reckoners say tens of thousands, of years. Others go further. Dr. Porter, of Lafayette College, a distinguished scientist, quotes an eminent brother scientist as saying, concerning the Fallen Column, a gigantic formation weighing one hundred and seventy tons, that "four thousand years must have passed since its fall," —taking account of the vertical stalactites which have formed upon it as it lies—"and seven millions of years were consumed



VIEW FROM CAVE HILL.

in its formation." Prof. Jerome J. Collins (of the "Jeannette" Polar Expedition), who visited the cave and looked at this column, declared all his preconceived ideas of time stranded. "I am not familiar," said he, "with the hypothesis upon which the calculations are based, but when the *savans* assert that it required seven millions of years to give this fallen column its present diameter, I feel like 'putting off my shoes' and standing on this sloppy stone, for it certainly must be 'holy ground.'"

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AT THE CAVERNS.

PREPARATORY.

Ample expenditure has been made to improve the property. A two story cottage has been built over the mouth of the cave, and here the visitor may purchase photographic views in the cave, taken by electric light, and specimens of cave formations, polished sections of which make beautiful paper weights.

From the door of the Cave House a fine view of the beautiful Luray Valley is obtained. Fronting us towards the east is the Blue Ridge, blue as the heavens, with its various outlying spurs, one of which partly conceals Thornton's Gap. On the right in charming profile the same mountain curves towards us, folding in its embrace the hills and dales, broad meadows, orchards and fertile fields of the upper Hawksbill. Mary's Rock is a famous land-mark in full view. On our left, towards Front Royal, the azure-tinted peaks of the Massanutton are seen to approach the line of the Blue Ridge. One sunset scene from this point is worth a trip across the Atlantic. A gentleman spending his summer in this valley thus expressed himself as to his resources for enjoyment:—

"To lie on a grassy hillside and watch the sun setting behind the Massanutton; to see the thousand purplish tints, that sleep within its winding valleys and glens, while the heavens above are glowing with splendors of pink, and red, and gold, amber, faintish-blue and green; to hear the cries and calls of eventide, the shouts of the workmen coming home, and the multitudinous noises of the farm-house at the close of the day—these are pleasures of which one never tires. Then there are cherry trees to climb, berries to gather, ferns to collect, a cave to explore, fish to catch, and long walks to take in the deep forest, or by the riverside, or down some rustic, vine-bordered lane. Sitting here on the broad, shaded porch, one may see the corn growing, and listen to the busy threshing machines buzzing fitfully far away across the hot fields throughout the idle, dreamy day—unhappy the man that cannot find a certain charm in these things. They awake a dim echo in our souls of the rustic lives of our ancestors. We find in them the pabulum of our highest emotions, inspiration for better living, and nobler thinking. City life tires, deadens, exhausts. It makes us perverse, evil, set in bad habits of mind which the amenities of country life alone can correct. By a fresh touch of Mother Earth, we are revived, like Antæus, and return to town in the autumn with increased physical, mental, and moral strength to renew and accomplish the tasks of life."

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Famous for many bloody combats during the war, this valley now, however, presents a scene of peace, and recalls the Laureate's vision—

> The island valley of Avilion;
> Where falls not hail, or rain, or any snow,
> Nor ever wind blows loudly; but it lies
> Deep-meadowed, happy, fair with orchard lawns,
> And bowery hollows crown'd with summer sea.

In the interior of the Caverns, cement walks, stone embankments, platforms, stairways, and railings have been provided wherever needed, so that at present the visitor can spend hours wandering underground without wetting his feet or incurring risk of a fall.

The tallow candles formerly employed to illuminate the cave were replaced in 1881 by numerous electric lights operated by a dynamo near the railway station. Wonderful scenic effects are obtained with the brilliant illumination thus furnished. This is the first instance on record in which a cave has been lighted by electricity, and it is supposed to be the first instance of a current traversing so great a circuit as nearly seven miles. Additional light is furnished for out-of-the-way nooks by the use of reflecting lamps carried in the hand. Darkness, however, is such a charm of the place that we hardly sympathize with the old lady (perhaps a Mrs. Partington) who after visiting the caverns at night declared her intention to go the next time during daylight, so as to see better.

Guides and attendants—among them the first person to enter the cave—await the visitor, and during regular hours there are no extra charges whatever, for any servive. Carriages meet every train to carry intending explorers to the caverns, about one mile distant from the station, where round-trip tickets for the ride to the cave in the cave hacks are sold, and all railroads sell tickets allowing the traveler to stop over at Luray.

No change of dress is needed on entering the Caverns of Luray. There is little dripping water where the visitor will care to go, and the walks are made sufficienty dry by artificial means. It is not necessary to imitate either the lady who took a trunk to the cave house with changes of attire, or the other who made the tour of the caverns in an elaborate velvet dress and train. Plain clothing and stout shoes alone are needed. Ladies should wear overshoes, but sticks, canes, &c., are needless, and wraps

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are superfluous in an atmosphere never lower than fifty-four degrees nor more than fifty-eight degrees, summer or winter.

It may not be amiss to add that the laws of Virginia impose a fine of from five to five hundred dollars for defacing or despoiling private property, and the guides have positive orders to arrest every person known to have broken off or carried away specimens. The law has occassionally been violated and fines have been imposed by the local magistracy, who feel a strong interest in keeping the cave formations intact.

THE DESCENT.

"In Xanadu did Kubla Khan
A stately pleasure-dome decree,
Where Alph, the sacred river, ran
Through caverns measureless to man,
Down to a sunless sea."

At the word "Ready!" we take our places in single file, and following the guide observe in descending the stairway, that the thickness of the horizontal stratum of blue limestone constituting the roof of the cave is about thirty-five feet. We are met by an outward draft of cool, fresh air, when suddenly we find ourselves in Entrance Hall, the vestibule of the realm of Stalacta, and experience a distinct emotion at the abrupt transition from the freedom of outside nature to depths where the mind must accustom itself to monstrous shapes, to the silence and weird influence of a subterranean world.

Our feeling is one of a new state of being. Queer shapes present themselves at every turn, aping grotesquely the things of past experience. Each object suggests some growth of animal or vegetable life or some work of human ingenuity, yet every resemblance proves illusory. Before us are glittering stalactites and fluted columns strong enough to bear a world; draperies in broad folds and many tints; cascades of snow-white stone; and beyond, a background of pitchy darkness in which the imagination locates more than the eye can see. The mind "dodges with belief." Fancy is dazed by the incomprehensible stimulus it receives from a multitude of novel forms. Around us is a silence that speaks. To what does it testify—the infinite inventiveness of chance? Not so, but to the industry of the mechanic

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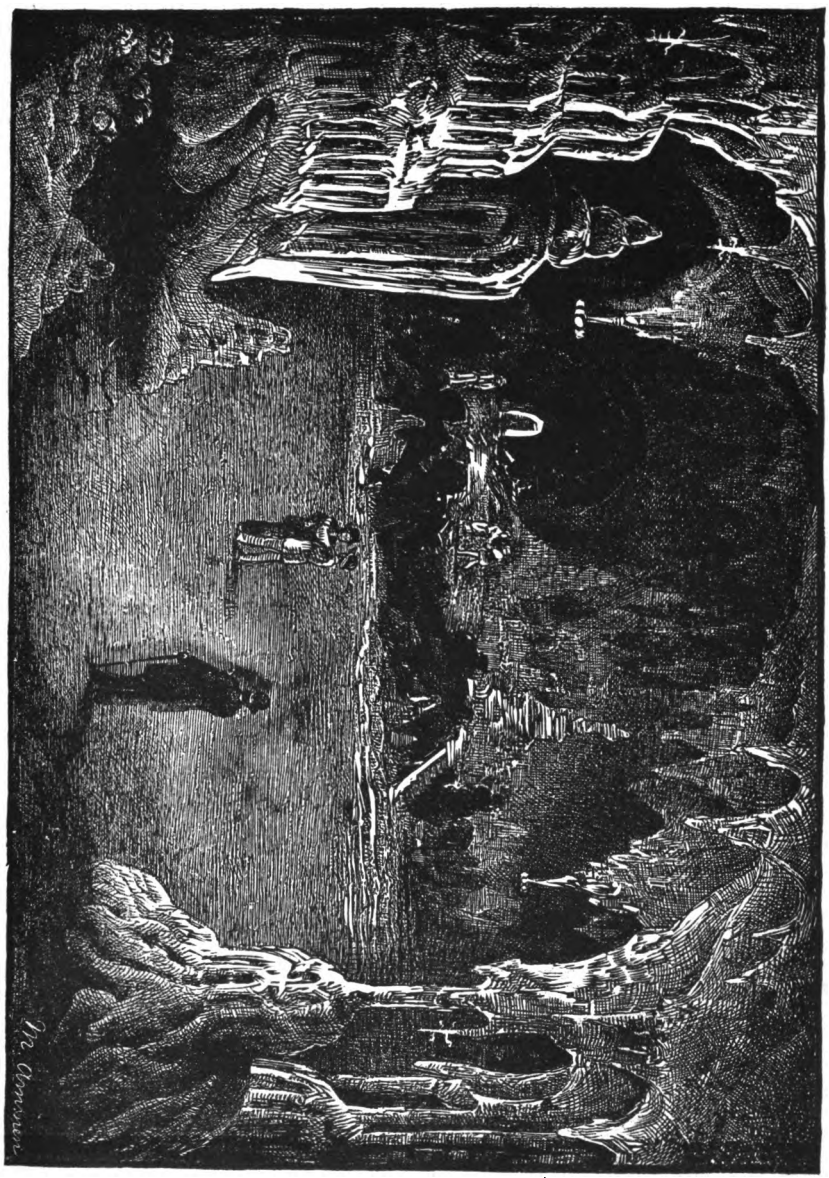
spirits of this underworld, gnomes and imps who seem to dart from shadow to shadow, behind column and angle, to watch that we harm not their marvelous handiwork. Awe and reverence



ENTRANCE HALL.

possess us. We are where, all for all, nothing has its fellow in in the world above, and where everything is sacred and inviolable.

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"Surely, God made this," was the explanation of Colonel Boteler, on first seeing this apartment. The wonder and awe thus inspired in the gifted West Virginian are sentments which the teachers of ancient religions sought to enlist in support of their oracles, which at Delphi, Corinth, and Mt. Cithaeron dwelt in caves. In Persia, caves were connected with the obscure worship of Mithras. They were the abodes of the sibyls and nymphs of Roman mythology.

But impressions differ. An Irish foreman employed upon the railroad expressed the emotions exited by a visit to the caverns by the out burst, "Be jabers, sur, this bates the Black Crook all hollow, jist."

Let us examine objects more closely under the glow of the overhanging electric light. First to attract attention is Washington's Column, a fluted, massive stalagmite about twenty feet in diameter by thirty in height, reaching from floor to ceiling. Stalactites depend on every side. From the centre of the roof one decends as aptly as if nature had designed it to support a chandelier. At other points we observe, in irregular masses, buncher of minute crystals of silica browned with clay, of a spongy texture, formed ages ago by infiltration into the mazy crevices of the limestone. Their matrix has been dissolved away, and they now attract attention by their close resemblance to the coarser sorts of sponge. Fine large quartz crystals an inch or two long have been found projecting from the limestone ceiling.

Three avenues radiate from Entrance Hall. We enter Entrance Avenue, and pass on our left a rounded bank of dripstone fringed beneath with semblances of dangling legs, the whole suggesting a turtle or fossil glyptodon. Farther on, upon the same side, we reach the Vegetable Garden, a space enclosed with a natural stalagamitic border. and containing bulb-shaped stalagmites resembling vegetable forms, bunches of asparagus, cauliflower, cabbages, &c.—according to one's fancy. Their formation is due to a mingled process of decay and growth, solution, and recrystallization.

We now descend a stairway to the level of Muddy Lake, now happily replaced by a cement walk. In doing so we see on the rounded face of the rock five parellel lines—scratches of a bear's paw, as our guide avers. We are in the Theatre; along our left is the Gallery. Overhead at this point is the Rustic Flower

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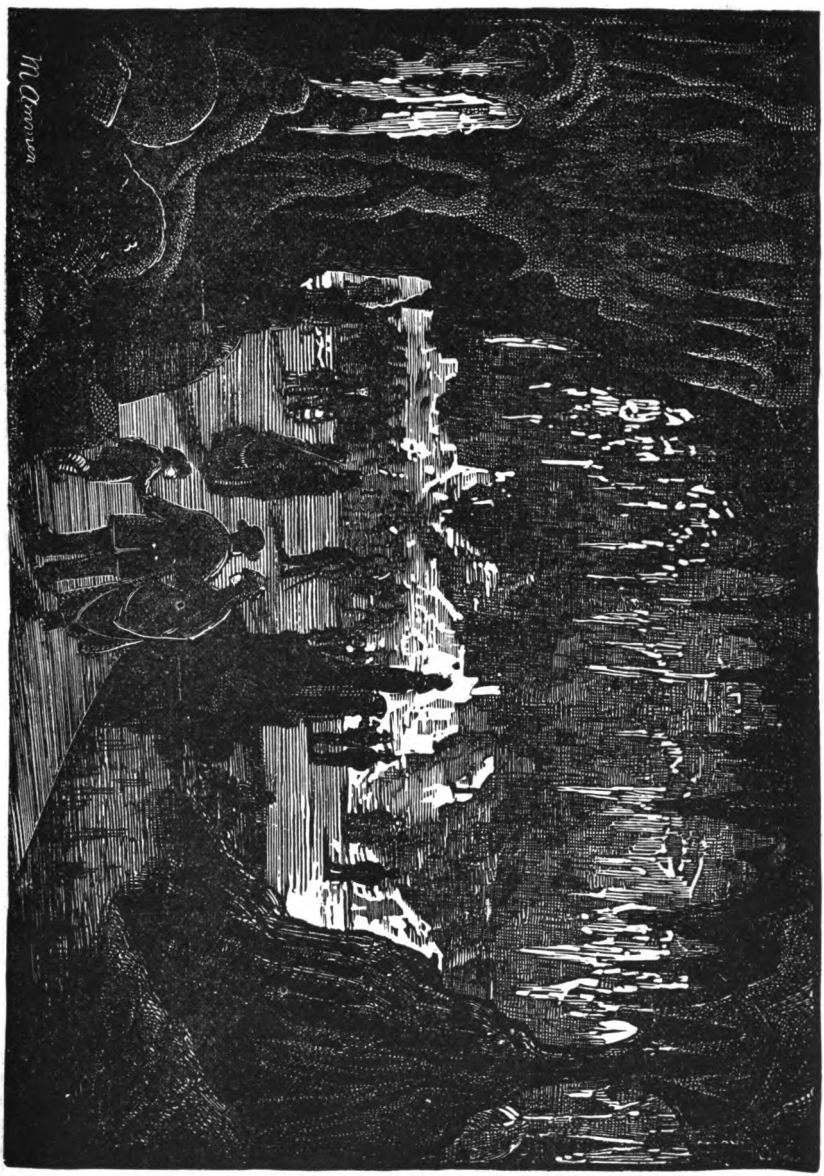
Basket. Looking forward toward the Fish Market one sees splendid effects from the electric light, streaming through the natural arch which spans the Lake, and reflected, in tints of silver and gold, from the formations new and old disclosed its rays.



THEATRE.

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It recalls and amplifies the thought of the sage Ulysses, where, in Tennyson's poem, he speaks of—

> "An arch wherethrough
> Gleams that untraveled world whose margin fades
> Forever and forever when I move,"

We pass on beneath the arch spanning the site of the Lake to the Fish Market. At the end of the cement walk we see hanging upon our left the fish in a row, black bass and silver perch done up in bunches—rock-fish, according to the terms of our guide's ancient joke. The semblance is perfect, We recog-

FISH MARKET.

nize their bluish backs, witish bellies, and forked tails, while, to increase the illusion, the trickling water gives them the moist, glossy coating of a catch fresh from the sea. "One has no difficulty," says the Smithsonian Report, "about the identification of the species of bass, perch, shad, mackerel, &c., some being gray all over, others having black backs and white bellies."

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Turning to the right and mounting a flight of steps, we are in the Elfin Ramble, a vast, open plateau, estimated to be five hundred feet in length by three hundred in breadth. The ceiling is a horizontal stratum of the original blue limestone, from which the distance to the floor varies from one to sixteen feet. Beneath us is a bed of dry clay, the remains of a former stratum from which the carbonates have been removed, as already explained. The lime has been but partially removed, however, much is still left as a chalky, whitish, pulverulent mass crumbling readily under the pressure of the fingers. It is probable that the strata here were removed by the solvent action of standing water, which once filled all this part of the cave. The theory has been advanced that the clay was introduced by violent currents of water, flooding the cave and bringing in *debris* from the surface, but this is impossible, as the cave is near the summit of a hill. Moreover, the absence of the flint and quartz so abundant on the surface above is conclusive against any theory of violent mechanical action. There has been no cataclysm. The processes by which the cave was formed are all going on at the present time.

We see beyond the plateau another electric light chasing the shadows from our path. We make it our objective point, and going straight across Elfin Ramble we reach Pluto's Chasm, the rift through which the god is supposed to have borne Proserpine to the under-world. It yawns at our feet in a startling way, attaining a depth of seventy-five feet and a lenght of five hundred. Facing us is a wall of glistening stalactites. At the bottom of the chasm, some distance to our left, is the Spectre, a tall, white, fluted stalactite bedecked, about its upper part, with a fringe of snowy draperies. It is not difficult to see in it a meditative ghost, muffled in white, like the traditional spectre of the drama. In the same quarter, but far away, we dimly perceive Proserpine's Column, of which more by and by. In walking toward it along the chasm we come upon the Mirror Lake, a small pool whose calm, clear waters are almost hidden by a superficial growth of stone. Owing to the absence of animalcular life all the waters of the cave are limpid and bright, though containing much lime carbonate in solution.

Returning now along the dizzy edge of the chasm toward its other extremity we come, first, to a flight of steps inviting us to descend, afterward and farther on, to the Balcony. Descend-

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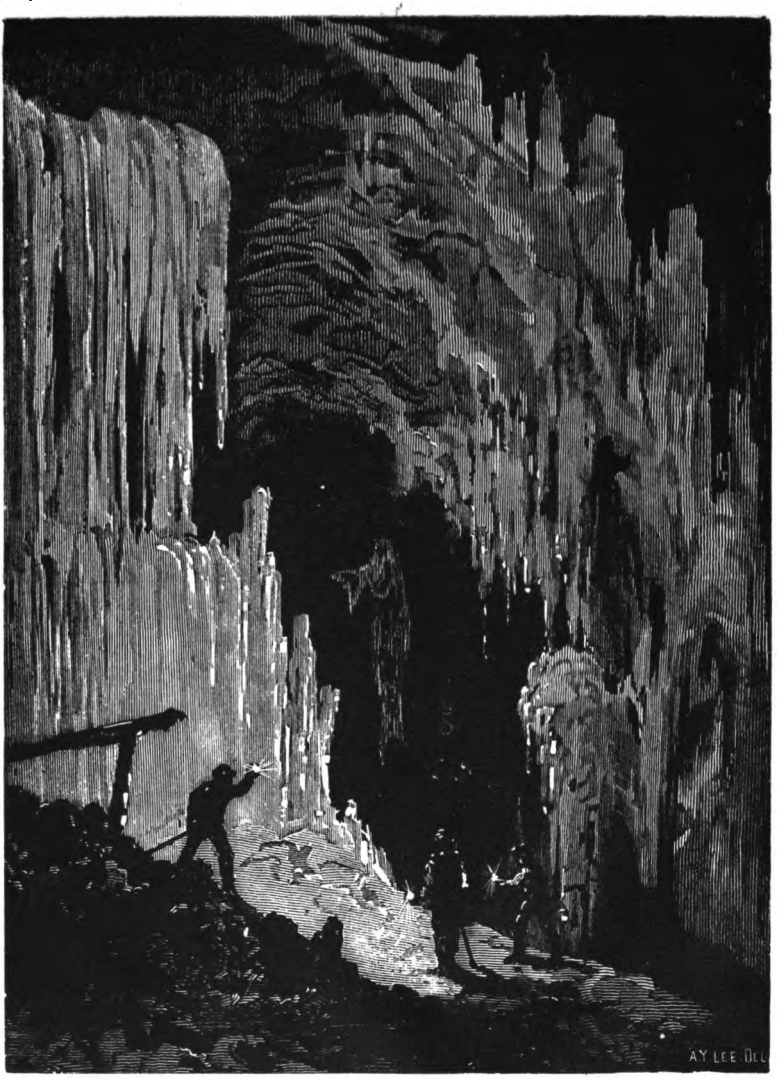

THE SPECTRE (PLUTO'S CHASM).

ing we find in Hovey's Hall (often called an extension of Pluto's Chasm) some admirable formations, among which may be mentioned a cluster of branching corals. resonant draperies, called the "Swords of the Titans," and a group of statuary—Hagar gazing pensively at her famished child Ishmael. Returning to the Balcony, we find it to be a space enclosed by a cluster of

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columns overlooking the chasm. It contains some stalactitic draperies which, for beauty of coloring, translucency and symmetrical folding, are with difficulty excelled by anything else of the kind in the cave. They are sixteen alabaster scarfs, side by side, of exquisite color and texture. Three are snow-white; thirteen, like agate, are striated with rich bands of every imaginable shade of brown, and all are translucent. The shape of each is that of one wing of a narrow lambrequin, one edge being straight, the other meeting it by an undulating curve. The stripes follow the curve in every detail. Down the edge of each piece of drapery trickles a tiny rill, glittering like silver in the lamplight. This is the ever-plying shuttle that weaves the fairy fabric.

The most curious, if not the prettiest formation in the Balcony is a small stone hand, with fingers distinct, growing out horizontally from one of the scarfs. What is so curious about it is not its flesh-like color, nor yet its resemblance to a cunning little baby hand, but the fact that its growth is horizontal and without support—violating thus the law of gravitation in a most puzzling manner. Such growths are rather abundant throughout the cave, but few are so pretty. Not only do these twig-like projections make out horizontally from perpendicular surfaces, but they also incline upward at all angles. Not infrequently the twig, or helictite, grows directly upward, and that too in situations where stalagmitic growth is plainly impossible.

Going back to the stair at the Fish Market we there turn to the right, and, after proceeding a few yards across Elfin Ramble, step aside from the main course to the right to examine the Crystal Spring. It is so named from the bright crystals of lime carbonate forming at its bottom and sides, and also, perhaps, from the sparkling quality of the water "clear as crystal" which fills it to the brim. It has lifted its bed several feet from the original floor and some fifteen inches above the present one, and is contained within walls of its own formation—walls crystallized from its own limpid waters. A fringe of stalactites, reaching from the ceiling to the rim of the lake, encloses it on every side, as if to prevent intrusion. Yet few can resist the temptation to drink of the pellucid nectar.

Near by, and connected with the Crystal Spring, are several others apt to be overlooked because almost concealed by a thin coating of stone encrusting their surfaces. They are indeed but

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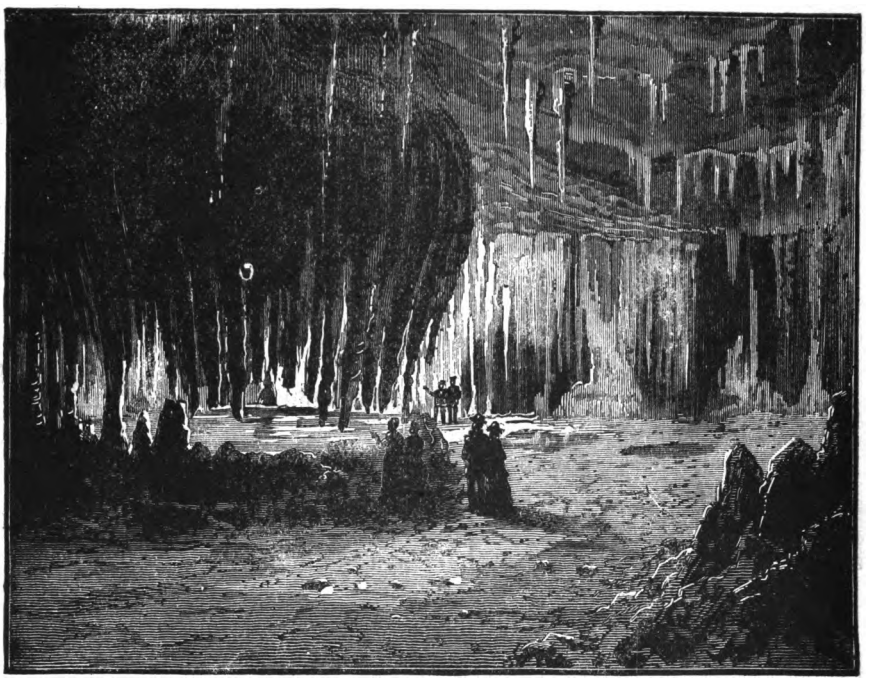
one lake; a disturbance in one troubles the waters of the others. Their crystal bottoms sparkle beautifully in the light of our lamps.



CRYSTAL SPRING.

Regaining the main route the guide now conducts us to that part of Skeleton Gorge where lie imbedded in dripstone, at the foot of an ugly precipice, the (real) bones of a man. Descending by a stairway we are brought face to face with the object of our search—the skeleton. Only a few of the larger bones of the leg, part of the skull, and a few vertebræ remain in sight; and these are held firmly in the grip of the stone which has formed over the rest.

There has been much dispute between the romantic and the practical concerning the unfortunate deceased, the former averring that it was an Indian maiden who, crossed in love, came here to find congenial gloom in which to indulge her reveries. Her neglected torch burning out, she got lost in the darkness and intricacies of the cave, and wandering about fell over the

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edge of the precipice and perished. The place is cold, wet, dark and dismal, and eminentiy suited for the close of a tragedy.

Among the facetiæ of the caverns it is recounted that two Confederate soldiers explored a cave near Shepherdstown, on the Potomac, seventy miles distant. Of course they lost their way. One, however, escaped, while the other entirely disappeared. The survivor claimed that his companion painfully made his way *sixty miles underground* and—unhappily, not possessing a copy of this guide-book—finally perished of starvation and exhaustion in the then undiscovered caverns of Luray. In the full spirit of this Munchausenish legend, the imbedded bones were, on a Decoration-day excursion, adorned by a visitor whose sentiment rebelled at the threatened neglect of these remains in the beautiful consideration of the holiday.

Competent anatomists assert that the bones are those of a boy or small man, probably an Indian. Dr. Elmer R. Reynolds, of the Smithsonian Institution, says of the skeleton: "There can be no question as to its being human." Dr. Joseph Leidy, of Philadelphia, on visiting the caverns in 1880, recognized the bones "as the femur and tibia of an adult man." At present undetected vandalism has so mutilated the bones as to make identification more difficult. Having examined a fragment under the microscope, Dr. Leidy writes, in 1887, that he is led to infer "from its condition of preservation," that "the man of Luray is more ancient than has been supposed, and probably belonged to a prehistoric race."

Mr. A. J. Campbell's acquaintance with the caverns inclines him to the belief that the man met his death accidentally while making his way from Pluto's Chasm across Elfin Ramble toward the entrance. Having a poor light, or no light at all, he stumbled from the cliff, which here is very abrupt. The view that the cave was once frequented is supported by the fact that Mr. Campbell once found pieces of charcoal while digging near the entrance; and further by the fact that a footprint is discernable in Giants Hall.

Leaving the skeleton, we observe near by, on the right as we ascend, the Mermaid, a stalactite suggesting the head, shoulders, waist, and fish-like tail of a lady of the sea. Returning to the Elfin Ramble plateau, we visit next Brand's Cascade and the Imperial Spring. The Cascade is of flowing snow-white stone, rendered gloriously effulgent by the electric light suspended

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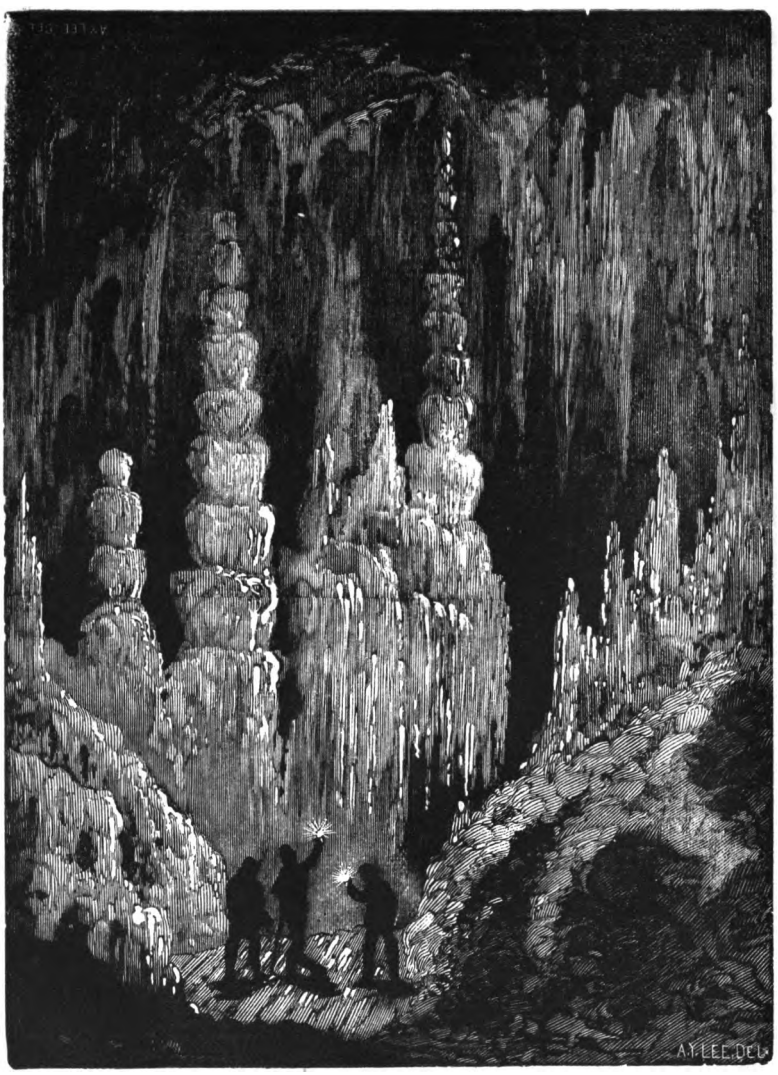
near. The Spring is a fine body of water richly enclosed in a forest of columns. It is arched above with myriads of stalactites reflected with most beautiful effect in the smooth waters of the Spring, until it is impossibls to distinguish the upward from the downward growths of pearly stone. The pellucid waters of these springs are so deceptive that a rash visitor refused to be



IN GIANTS' HALL.

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convinced that the Imperial Spring was not perfectly dry, and against the representations of the guide, insisted upon walking into the Spring to certify his conviction. He found the water was "real" water, and quickly retreated from both positions. Near at hand is the Ladies' Toilet Table, for the use, perhaps, of Diana, whose bath is not far away.

Retracing our steps to the main route we now make for Giants' Hall. Striking across the Ramble we reach the upper end of Pluto's Chasm, and find ourselves hard by Proserpine's Column. Looking down the ravine we again catch sight of the distant Spectre.

Farther on, and aside from the main route, is an opening in the blue limestone, a rift not many feet wide or high, but rich in varied draperies and fine white stalactites. We clamber over blunt stalagmitic stumps to inspect the Grotto of Oberon, a space enclosed by white columns and containing a pellucid pool. Here is the Bridal Chamber, and near by one sees the flattened stalactite's mode of growth illustrated by formations hanging from a ledge of stone.

Passing beneath a low, broad arch our attention is called to a formation of translucent stone.* It hangs in graceful folds, and when the guide holds his lamp behind it the transmitted light reveals beautiful red stripes that follow every curve of the winding border. Near this point, on the right, was found the impression of a moccasined foot.

GIANTS' HALL.—We now emerge upon the side of a vast space embracing several large apartments, to which the collective name Giants' Hall has been aptly given. At this moment a harmony of soft, sweet sounds falls upon the ear from some invisible source far away. It is the Chimes, in the Cathedral, which we shall presently see. In Giants' Hall we note that the formations are on a larger scale than hitherto. Great sentinels

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*Sometimes called the "Breakfast Bacon," whereby hangs a tale. On an "excursion day" the guide noticed that two inches of this formation had been broken off. He detected the offender, who was fined by the local magistrate. A few weeks later, on another excursion say, it was noticed that the broken piece, which had been skillfully fastened in its place with wire, was again broken off. Suspecting his man, the guide clapped his hand on the pocket of the new offender, and found the piece, which was again the occasion of a fine. The fragment has been again put in place—it is hoped, to stay.

The owners of the property, with commendable sentiment, have earnestly invited the co-operation of the public to protect the cave from defacement and mutilation. They claim a proper recognition of the respect and awe that the wonderful productions of Nature here visible should inspire.

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.oom on every hand, and the ceiling and farther sides would be lost in the distance, but for the splendors of the electric lamp.

Turning to the left we reach successively Titania's Veil, a marvel of beauty, and the Snow Bank, the latter a broad, white stream of stone. Santa Claus, a stalagmite seven feet high, stands to the right of the Veil. Farther on, still upon the right, we discover a most beautiful stalagmite, the famous Frozen Fountain, attracting every eye with the brilliancy of its silvery glow, which beggars description. The pure white drapery hanging over this charming object is scarcely less handsome than the Fountain itself. The little lake near by is called Diana's Bath.

The Saracen's Tent is upon our right. It is a large circular space enclosed by long yellow draperies depending from a ceiling some fifty feet above the observer's head. From the outside it is strikingly suggestive of an Oriental pavilion, The Tent affords a fine view of all that part of upper Giants' Hall which goes under the name of The Cathedral, or Organ Room, and of part of the lower Hall.

Let us enter this Titanic tent. Below and stretching far away to the right is an immense chasm, high and broad, and remarkable for the great size of its formations. The lofty ceiling is scarred with the wounds of huge stalactites broken off ages ago by their own weight and fallen to the floor. Most of these being disintegrated by the acid waters about them, have disappeared. Two remain. One, the Organ, a mass of dripstone with long sonorous stalactites still attached, upon which notes may be sounded. The other is the Fallen Column, a fragment of its former self, but still a monster twelve feet in diameter by twenty in length, and of an age estimated by some scientists at millions of years.

One who wishes to surrender himself to the emotions inspired by the place, will allow the rest of the company to precede him, while he remains to keep solitary vigil. In solitude and silence, unattracted by reminders of the outer world, the soul acquires the power of seeing the invisible. The spirits of the under-world gain confidence to approach and whisper their incummunicable secret, and what we had supposed was the monotone of falling drops of water becomes the intelligible voice of the gnome who has shaped the fantastic world around us. The eye gains a keener sight. The imps and goblins who love to lurk in shadows start forth to view in grotesque shapes.

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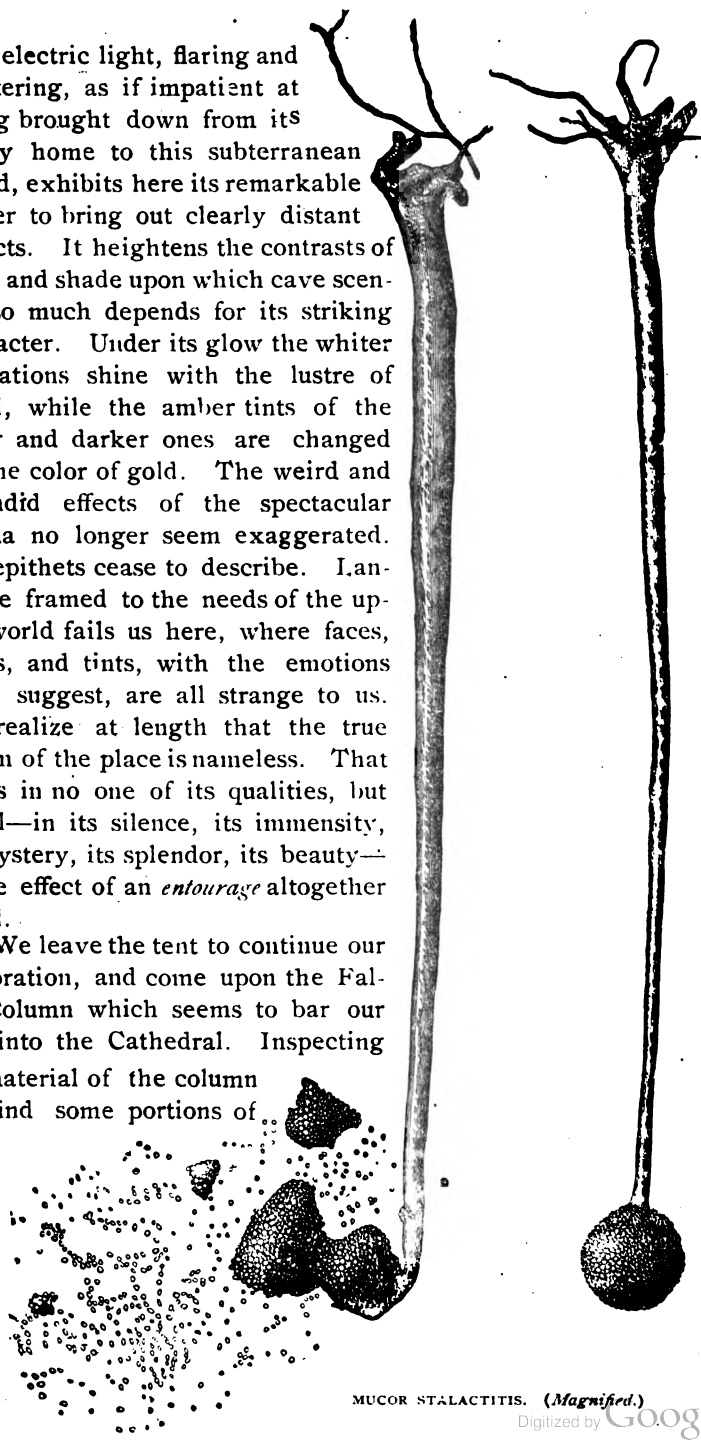
The electric light, flaring and sputtering, as if impatient at being brought down from its skyey home to this subterranean world, exhibits here its remarkable power to bring out clearly distant objects. It heightens the contrasts of light and shade upon which cave scenery so much depends for its striking character. Under its glow the whiter formations shine with the lustre of pearl, while the amber tints of the older and darker ones are changed for the color of gold. The weird and splendid effects of the spectacular drama no longer seem exaggerated. But epithets cease to describe. Language framed to the needs of the upper world fails us here, where faces, forms, and tints, with the emotions they suggest, are all strange to us. We realize at length that the true charm of the place is nameless. That it lies in no one of its qualities, but in all—in its silence, its immensity, its mystery, its splendor, its beauty—in the effect of an *entourage* altogether novel.

We leave the tent to continue our exploration, and come upon the Fallen Column which seems to bar our way into the Cathedral. Inspecting the material of the column we find some portions of



MUCOR STALACTITIS. (*Magnified.*)

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its interior at an advanced stage of decay. A pen-knife blade is easily thrust in to the handle, and our finger-nail abrades it. Thus large draperies are often found worn to tatters. Out of their material new formations are made, and the gorgeous furniture of the cave is always undergoing change and repair. The Fallen Column also affords facilities for examining a fungus (*mucor stalactitis*) said to be peculiar to the Luray Cave. In its most common form it consists of a splendid stem about one-eighth of an inch in length, bedecked at its projecting extremity with a bright globule of water, and having from one to three other such globules distributed along its length. Under the microscope each globule is seen to have for its nucleus a tiny bulb containing spores. Slender filaments trail about the bulbs and hang in graceful curves to the ground. It is a beautiful object when seen fresh from its habitat.

Advancing a few paces to the right, we mount a platform from which to obtain a view of the Empress Column, a stalagmite rich in flutings and dark about its lower part, but growing white as it rises until its summit is clothed with indescribable beauty. It is perfectly white—luminous, one would say. Nothing could be better taken as the type of absolute purity. It is truly superb. In rear of the Empress Column is seen Madonna and Child.

The tablet of black marble to the left marks a massive column dedicated in 1879 to the memory of Dr. George W. Hawes by the Smithsonian Institution. Mounting to a somewhat higher level we enter a wide apartment, whence vistas open in many directions, known as the Blanket Room. Upon our left on entering, we observe the Leidy Column, dedicated on October 2nd, 1886, to Dr. Joseph Leidy, of Philadelphia.* At the same time a handsome stalactite near the Double Column was dedicated to Dr. Leidy. Farther on we come upon the Camel and Jumbo. The latter is a stalagmite whose outline suggests the proboscis, head and back—howdah included—of an elephant. Within ten feet of Jumbo we see the head, neck, and hump of the "ship of the desert." It has feet, too, says Sam Smith, our guide—"if we *measure* it-' The Handkerchief is a pretty piece of stone drapery. The chief attraction of the room, however, is the Wet

*Dr. William Hunt, of Philadelphia, to whom the function was committed, used these words, "This column and yonder stalactite are dedicated to Professor Joseph Leidy. May they aid to perpetuate the name of one who, holding communion with the visible forms of Nature, has so learned to interpret her grand simplicity that to hear him is to understand."

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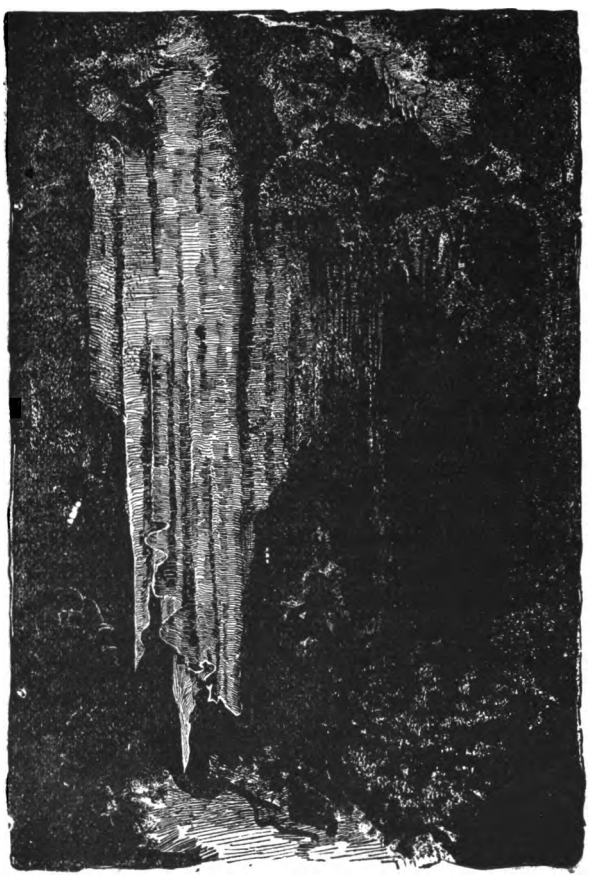
Blanket, a very beautiful piece of drapery in translucent stone from the ceiling. The guide by means of a pole will lift his light behind it, so as to bring out the colored stripes that follow the border of the blanket through all its intricate folds. Leaving the Blanket Room, we see again the unique Empress Column and then, turning to the left, inspect the Hollow Column, not far distant. This is a huge stalactite, extending from the ceiling to the floor, through the axis of which a streamlet of fresh surface water has eaten its way from end to end, opening up a shaft by which we may ascend forty feet into a gallery, over the rooms we have been exploring.



THE WET BLANKET.

We return now to the Fallen Column, and passing beneath it enter the Cathedral. Our attention is called to the Angel's Wing, in regard to which the guide will expound a curious theory to account for its growth without visible sustenance. It is being enlarged, in his opinion, by water, which descends

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through a hollow column near by. This water oozing out laterally, it is held, gives the wing its breadth. Advancing a few steps we approach the Organ, whose pipes when struck by the guide emit various notes. On the left is a group—Christ Blessing Little Children. Near this group is the Sleeping Infant with its head pillowed upon a stalagmite.

To the right are the Chimes, a number of short stalactites, which, under the guide's skillfull touch, produce the sweet tones heard on first entering the vestible of this hall. Farther on, over a slight elevation, we enter the Throne Room. The throne is a niche in the wall on the right. Here, too, is Chapman's Lake, so named from an enthusiastic visitor who, advancing, head up, candle elevated, examining the ceiling, suddenly plunged waist deep into this pool of icy water, extinguishing at once both candle and enthusiasm. From this point has been opened the way to the wonderful region of Hades, with its beautiful waters, Lake Lethe and Broaddus Lake, but we shall defer our visit to it to another day.

Retracing our steps to the lower end of the room containing the Organ, we find ourselves face to face with a perpendicular barrier of massive stalactites. Taking the opening next the wall we reach presently upon our left the Tower of Babel, a fanciful name for a very broad and massive stalagmite, whose surface, fluted with successive courses of minor stalactites, suggests the idea of its having some twenty odd stories. Katie's Secret is a small apartment to the left.

We now have reached the top of a flight of steps descending into Giants' Hall proper. With the help of two electric lights we enjoy a magnificent view of a chasm which, lofty and wide, and flanked with massive formations of every kind, is beset with gigantic blocks of limestone fallen from the ceiling, and crowded with stalagmites which tower above our heads. Every thing is of gigantic proportions. Folds of stone drapery, forty feet long vibrate for many seconds to the light touch of the guide.

The Sultana Column, near by on the left, is of symmetrical shape, but discolored by age. An adjacent column suggests an Indian Squaw, and another Chanticleer. A rugged mass of stone farther on, exhibiting a :'gaudy leonine beauty," is the Lion of Luray. Winding our way through a labyrinth of spires, minarets, formations infinite in number and kind, we come at length to the base of the Double Column—two huge brown masses, the one a

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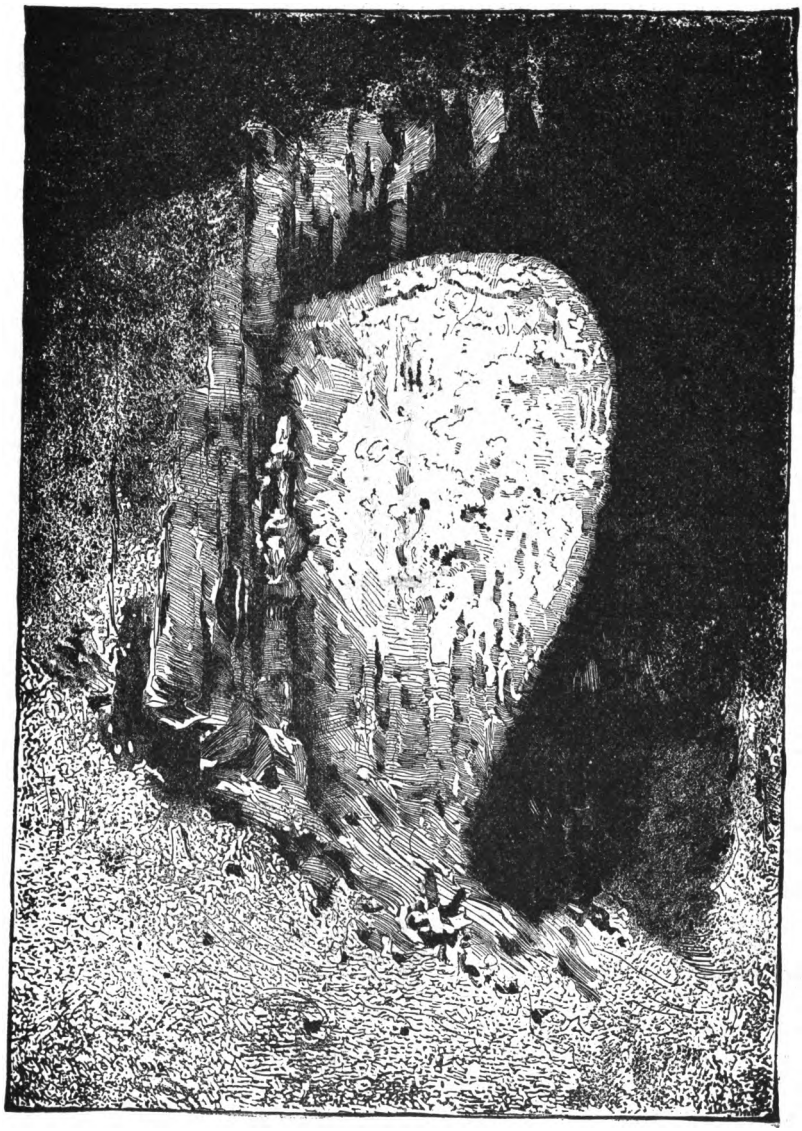

THE ANGEL'S WING.

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stalactite hanging about fifty feet from the ceiling to within a few feet of the floor; the other a stalagmite rising by its side nearly as far; both of immense size and symmetrical in shape. The Double Column was in 1881 dedicated, by the Reading Society of Natural Sciences, under the name "Henry-Baird Column," to the late Prof. Joseph Henry, the first Secretary, and Prof. Spencer F. Baird, the present Secretary, of the Smithsonian Institution at Washington.

THE ORGAN.

Within a few feet hang sonorous draperies of great length, whose tones are of exceeding richness:—

> "Like an Æolian harp that wakes
> No certain air, but overtakes
> Far thought with music that it makes."

Proceeding along the plank walk through the Narrow Passage, we have on our right the Frozen Cascade, succeeded

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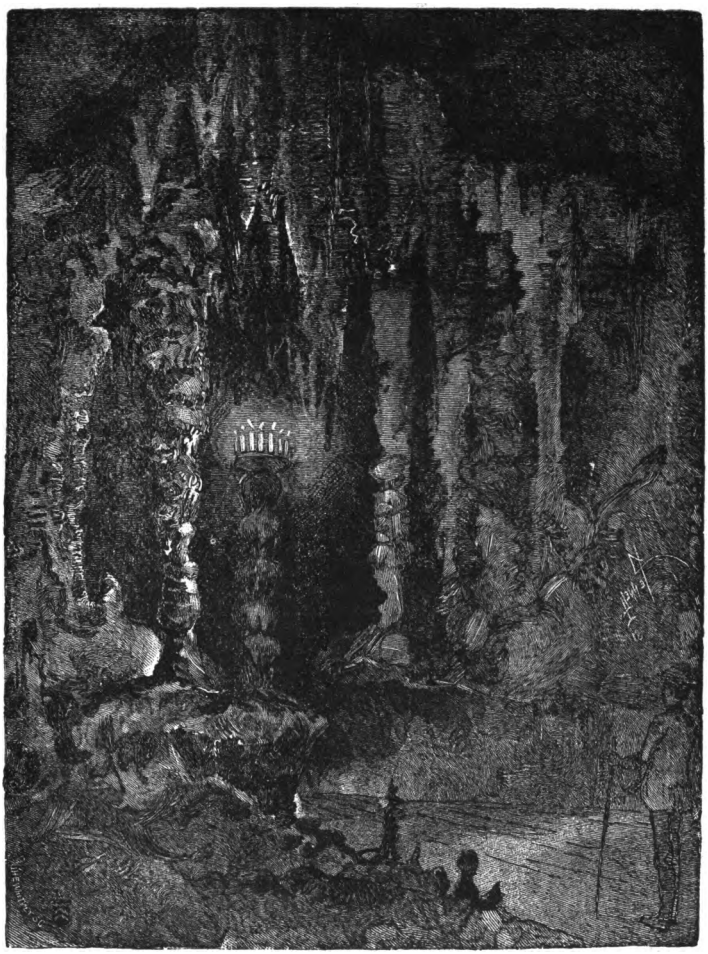
farther on by the Chalcedony Cascade. Opposite the latter upon the left is Mahomet's Coffin, an immense boulder of limestone suspended in mid-air.

THE BALL ROOM.—We emerge at length into a large open space, nearly circular and magnificently furnished with all that



A NOOK IN THE BALL ROOM.

is striking and attractive in cave scenery. Its size and shape justify the name which has been given it. This apartment, the lowest in the cave, is two hundred and sixty feet beneath the surface.

The objects of interest here are the Tombs of the Martyrs, the Vault, the Lady's Riding Whip, the Idol, the Conical Shot,

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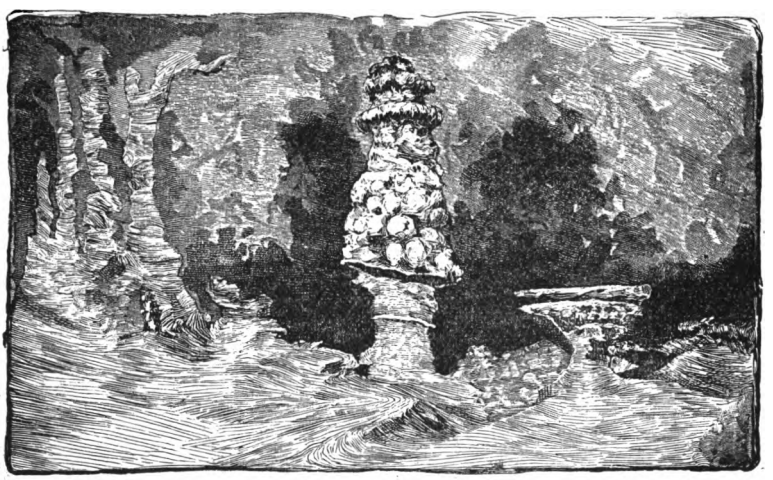
the fair maiden Cinderella, and the Pawnbroker's Grave, marked with three balls. Two sets of rooms adjoin. The one contains the much admired Coral Spring, a series of pools in tiers, the lower ones formed and fed by the outflow of those above, and all lined with calcite crystals, Prettily colored and sonorous draperies of great length hang near by. Here also is the Basket of Fruit.

Another set of rooms, including Collins' Grotto (named after Prof. Jerome J. Collins, who spent many days exploring the caverns), is reached by mounting stairs opposite the entrance to the Ball Room. The Indian's Ghost stands on the left as we



THE BASKET OF FRUIT.

enter. Collins' Grotto is rich in formations of rare and curious shapes, among which the Dragon is especially interesting. An attraction connected with it is the Snow-ball Spring. On our return from the Grotto we stop to examine the Bird's Nest, a cavity in the rock containing three beautiful white eggs—cave pearls—formed and forming from drops of lime-laden water falling from the ceiling. Opposite the Coral Spring is an opening leading up to Pluto's Chasm.

We have seen enough for one day. We are exhausted mentally by the multide of our new impressions, and by the lively emotions to which they have given rise. Deferring the wonders yet remaining to another time we hurry back towards Entrance Hall, and mounting the stairway into the purplish light of day realize at length that we have enormous appetites and are perhaps a trifle tired by hours of cave travel.

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OTHER PARTS OF THE CAVE.

"Silence is vocal if we listen well."

Large areas, embracing some of the finest parts of the cave, are less accessible, and the general visitor does not see them unless by special arrangement. The route described in the preceding chapter includes those more accessible portions which are of general interest. More than one day is required to adequately examine all parts of the caverns and there remain for the unaunted explorer certain regions for which special preparation is necessary; miles of clambering up the sides of chasms, along slippery ledges, swinging from pillar to pillar at great risk of losing one's hold on treacherous stalagmites—to give a name to some as yet unchristened gulch; ridges to straddle with yawning gulfs on either side, and embarrassing sharp-pointed stalactites overhead: descents to be made, with labor and peril, by the help of decaying draperies, to reach floors deep with "boot-jack mud," or forming, perhaps, a thin crust over some bottomless pit; crawling to be done through passages too small for one's person, in mingled mud and water,—such are the toils of the explorer. He is beguiled to his task, however, by the novel beauties and terrors which present themselves at every turn. A pleasant excitement takes possession of him, and labor and lapse of time are forgotten.

THE DRAGON.

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Five routes requiring several hours remain: STEBBINS' AVENUE, STONEWALL AVENUE, to HADES, to CAMPBELL'S HALL, and to the ROUND ROOM, or EREBUS.

STEBBINS' AVENUE.—Turning to the left from the Entrance Hall, we enter Stebbins' Avenue, so called from one of the gentlemen to whom the discovery of the cave is due. It is a series of spaces of low pitch and irregular shape opening one into another; all with floors more or less dry because the water passes away by the lower level of the rooms which are found to exist beneath. The avenue presently divides into two, of which the right one leads to Crystal Lake, the left to Pisa and the rooms, beyond.

We recognize first the banded stalagmite called Pyramid of Cakes. It is surmounted by the Pine Apple. Near by is a bank of stone having a variety of colors, but most remarkable for a jutty black, supposed to be due to manganese dioxide. Near this is the Chinese Idol, on its pedestal of stone. This part of our way rings beneath our tread with a hollow sound, and the guide removes a slab which conceals the entrance to a region beneath known as Tartarus.

The Blacksmith's Shop with its fire-place and two stalagmitic anvils comes next. In an adjoining room is the Cannon Ball, a 24-pounder resting at the bottom of a limpid pool. Farther on is the Grape Spring encompassed with grapes, or botryoids, of all shades from black to white, small and pretty. A mossy growth of calcite lines the bottom of the Spring. Upon the right we enter a recently-discovered room one hundred and fifty feet long, fifty feet broad, and twelve feet high. It is called Dr. Hawes' Room, in honor of Dr. George W. Hawes, of the National Museum at Washington.

Crystal Lake is forty feet long by eight deep. We shall not venture on the narrow plank upon which the guide crosses. We turn back, and near the Cannon Ball enter the narrow opening leading to Pisa. After crawling on our hands and knees for some distance we reach a large open space, the bottom of which is the bed of a lake. Its level is sunken about five feet—its bottom having fallen out, so to speak. Its sinking seems to have been expediated by the weight of an immense fluted stalactite some twenty-five feet high by twelve in diameter which has broken from the ceiling, crushed the floor, and brought down with it many of the adjacent columns. It is a veritable Leaning Tower.

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Beyond are Jacob's Well and the curious Bayonet Well, which have for their bottom the new level to which Leaning Tower has fallen. The Bayonet is a perpendicular strip of drapery

EMPRESS COLUMN

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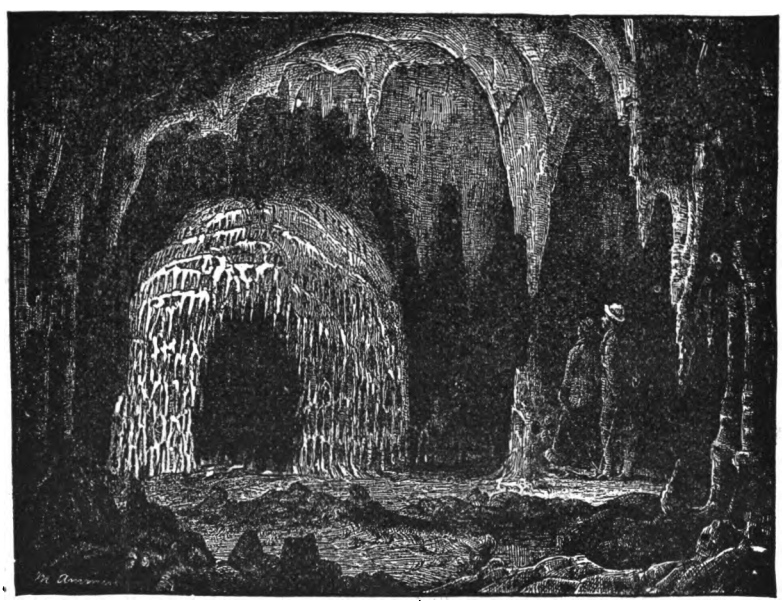
rising from the edge of the Well, having been left behind at the sinking of the stalagmite to which it was attached.

There are many fine rooms in this quarter. The locality is specially rich in helictites, the curious lateral and upward growths alluded to before. They writhe upon the surface of their support like worms, in complicated clusters, perfectly regardless of the law of gravitation.

Stonewall Avenue is a continuation of Entrance Avenue. Starting from the Skeleton we mount a stairway, and upon the higher level find upon our left a room called Paradise, containing a pavilion ornamented with delicate lattice-work of snow-white stone. It is called the Gnome's Pavilion. Farther on upon the right we enter a passage conducting us into an apart-



STONEWALL'S TENT.

ment which from its connection with the Imperial Spring is known as the Empress Chamber. The splendid view under the electric light from this room across the Imperial Spring with its myriad of encompassing columns, and beyond to the rugged features of Stonewall Avenue, must not be missed. Returning to the main route we rest for a moment to inspect the trailing

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tufts of a white, furry fungus of great beauty, hanging here, as elsewhere in the cave, from the plank of which stairways are constructed. It doubtless belongs to the upper world, being brought in with the plank, but as it seems to find here the environment most favorable to its growth it has been christened Cave Ermine. At a distance its pendent masses are scarcely to be distinguished from stalactites.

Continuing our explorations we come next to the Twins, lakes of considerable depth encompassed by a wild forest of columnar stone. The clustering together of many stalactitic pillars forcibly recalls the multiplex columns of which the mediæval artist was so fond, making it easy to believe that the Gothic architect derived his idea from the growths of caves, rather than those of the forest.

Beyond the lakes turning off to the right we pass beneath the Canopy, a circular rock jutting from the wall; bare as to its flat under service, but ornamented about its circumference with a fringe of drapery. Going farther we enter the engine room, containing the locomotive and curious helictites of unusual size resembling potatoes. The formations here are of a strikingly eccentric character. Turning back to the main route we continue for some distance until we reach the point at which the guide tells us it is proposed to open a new exit from the cave to the outer world. Near Dr. Miller's Room, named after the late Dr. Miller, of Luray, an indefatigable explorer of the cave, we find large masses of calcite broken away with dynamite cartridges in an effort to create a wider opening. Some of the huge blocks thus dislodged are remarkable for fineness of texture. "On being cut into slabs and polished they are quite equal to the celebrated Mexican onyx, from which they differ mainly in vividness of color." Sections of stalagmites show great variety and richness of coloring. Some of these have been polished and are sold to visitors as mementoes of the caverns. To the inexperienced eye they resemble sections of petrified trees, and would-be purchasers have been known to ask for those "specimens which have the bark on."

HADES.—There is perhaps no more attractive region of this under-world than that portion of it, which, from its beautiful lakes, brimming with limpid quiet waters suggestive of the calm of the world of spirits, has received the name of Hades. While it may be fairly considered the vestibule of a better world, the

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visitor will be reminded, however, by his guide that it is in close connection with Tartarus, to which at various points there are evident openings to be avoided by the wicked.

Passing from the Throne Room into a narrow rift in the solid rock, after a number of bewildering turns and windings, we enter the labyrinthine mazes of Hades. The first object to attract our attention is Broaddus Lake. It is the largest body of water

BROADDUS LAKE.

in the cave, and one of the prettiest. Calm, clear, still, it reflects in a wonderful manner the many stalactitic beauties that surround it. A beautiful white column rises from its edge to the ceiling. Within a few feet is the bed of an old lake, now empty and dry, whose sides terraced at different levels display every stage and incident of lake-growth. The curious tower-like stalagmites

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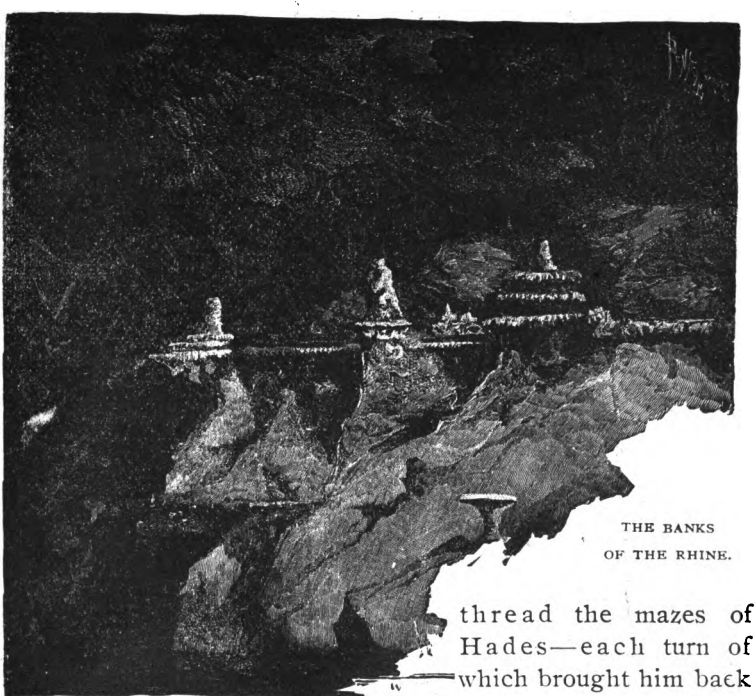
along its border, suggestive of castles, have secured for the lake the name of the river Rhine. The visitor must not fail to see the Chinese Devotee. Adjacent to it and still more interesting is Lake Lethe, a body of water contained within raised banks of its own construction, and containing within its waters many novel growths resembling mushrooms in stone, exceedingly curious to the students of cave history. It has justified its name. A gentleman who, wandering here alone, took a drink of its limpid crystal, forgot his way out, and after many futile attempts to



THE BANKS OF THE RHINE.

thread the mazes of Hades—each turn of which brought him back to Lake Lethe—was rescued by the guide after his candle had burned down to the last inch.

There are numerous rooms opening out from Lake Lethe which are particularly rich in helictites, and in stalactites of queer shape. A matter of interest in this locality is an abyss to which no bottom has yet been found. Mr. A. J. Campbell was once let down into it a distance of seventy-five feet, but without finding its lower limits. The visitor should observe caution in his movements, as he may be lost in the little-known windings of

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this part of the cave. The peculiar merit of Hades is its series of wonderful lakes, and the facilities it affords for observing the growth of formations submerged in water.

CAMPBELL'S HALL.—Proceeding towards the entrance to the Ball Roam, we plunge into a dark ravine upon the left, and mounting a flight of steps find ourselves on the second story of the cave, and at the opening into Campbell's Hall. It is an apartment of irregular shape, about one hundred and fifty feet in diameter and thirty-five feet high, remarkable for the variety of color and fine state of preservation of its formations. Some are of pearly whiteness, others are red, bright yellow, gray, bluish, and jetty black. It is worthy of remark that the Coral Spring derives its waters from this place.

Specially to be noted is Alcinda's Spring or the Fountain in Tiers. Imagine upon the summit of a bank of stone a large shallow basin filled with pellucid water. Its outflow is received into six other small basins arranged in graceful curves along the slope below. The sides and bottoms of all are covered with calcite crystals of an amber color. In the larger basin stands a brown column three feet high, whose base is beautifully broadened with a wreath of crystals as far up as the water reaches. The Scale Column is sheathed in crystals resembling scales. Campbell's Hall answers to our highest conception of the ornamental in cave scenery, since here, to a remarkable degree, the formations retain their original beauty. During the past winter extensive improvements have been made, the stairways, bridges and walks, in this portion of the Caverns, brick and cement taking the place of wood, rendering this superb Hall and its varied beauties accessible to the visitor without the former risks and inconveniences.

On making our exit we discover over our heads two folds of stony cloth, of light color, translucent and finely striped with opaque bands of snowy whiteness—the prettiest in the cave.

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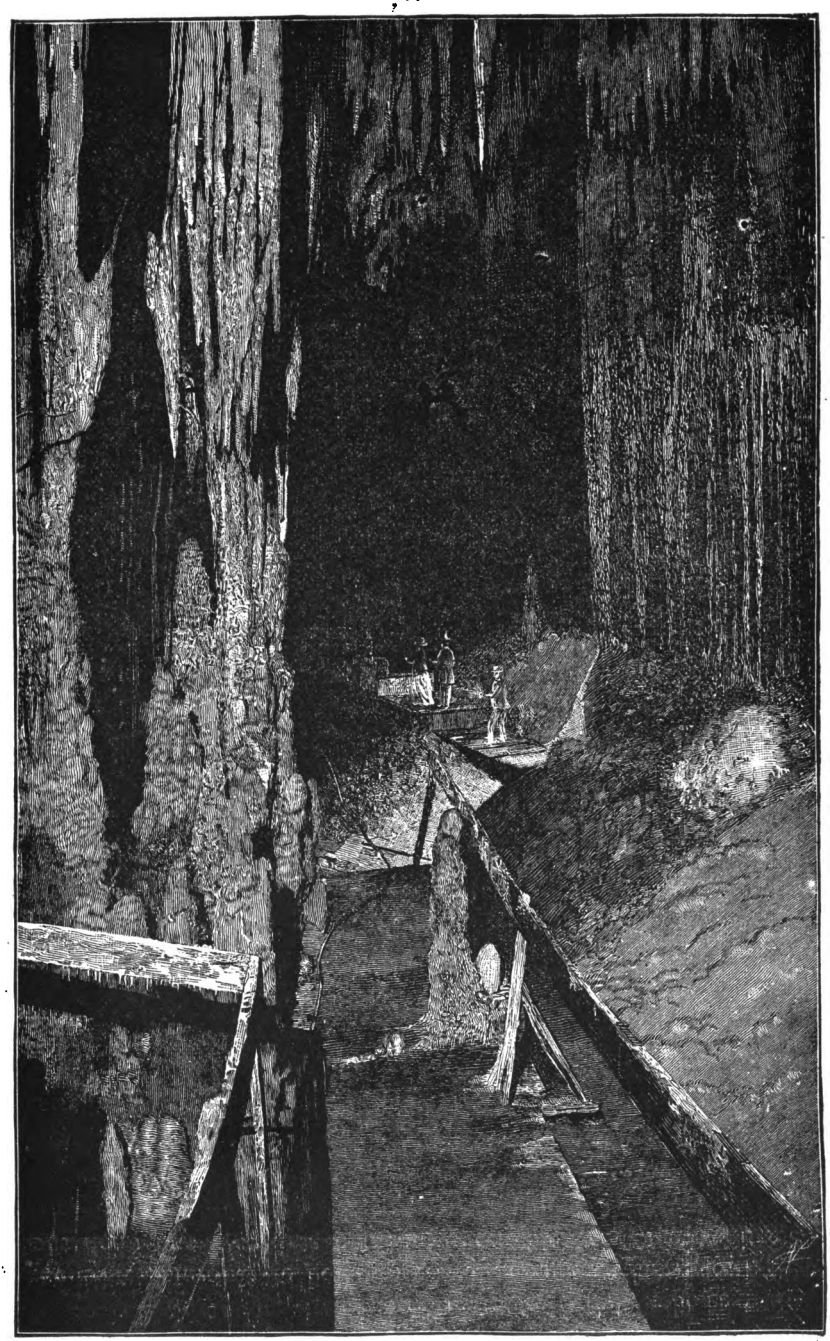

CAMPBELL'S HALL.

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EREBUS.—Clambering over a huge pile of ruins in Giants' Hall, and mounting to a considerable height by means of a ladder, we enter upon ths route to Erebus. On our way we find many curious formations to admire. Among these may be mentioned the Toys, a cluster of upward and lateral helictitic growths gathered about the capital of a stalactitic column. Turning about we find the way from this point to Erebus arduous and difficult. It grows smaller and smaller until we must needs creep, at full length, some twenty feet through a narrow, wet, and muddy passage, which is but a crack in the blue limestone. It is impossible to avoid the stalactites besetting the way, and the dripping water fills the eyes with the tears appropriate to so uncomfortable a situation. Our clothing is reduced to a miserable plight.

We are rewarded upon our emergence into Crystal Room by the discovery of numerous hexagonal crystals, transparent, of large size, and beautiful. They project from the ceiling, in clusters commonly, and are found only where the ceiling is the original blue limestone, within which, in cavities, they seem to have been formed at some remote period. They are two, three, and four inches in length, and from one to twelve-sixteenths of an inch in thickness.

We rest at last in Erebus, a room large, dark, and dismal having the shape of the figure 8. At the point corresponding with the middle of the figure, a large and symmetrical column of brownish-white stone arises from floor to ceiling, a distance of about seventy feet. It is the only column of any size in the room. Along the side runs a sort of gallery containing fine specimens illustrating the processes of "vegetal growth." Entering this gallery we find it filled with decaying forms, and peering thence into the central abyss—

> The dank tarn of Auber
> The ghoul-haunted woodland of Weir

of Poe's fancy—we see lying there many objects whose shape is undistinguishable in the darkness.

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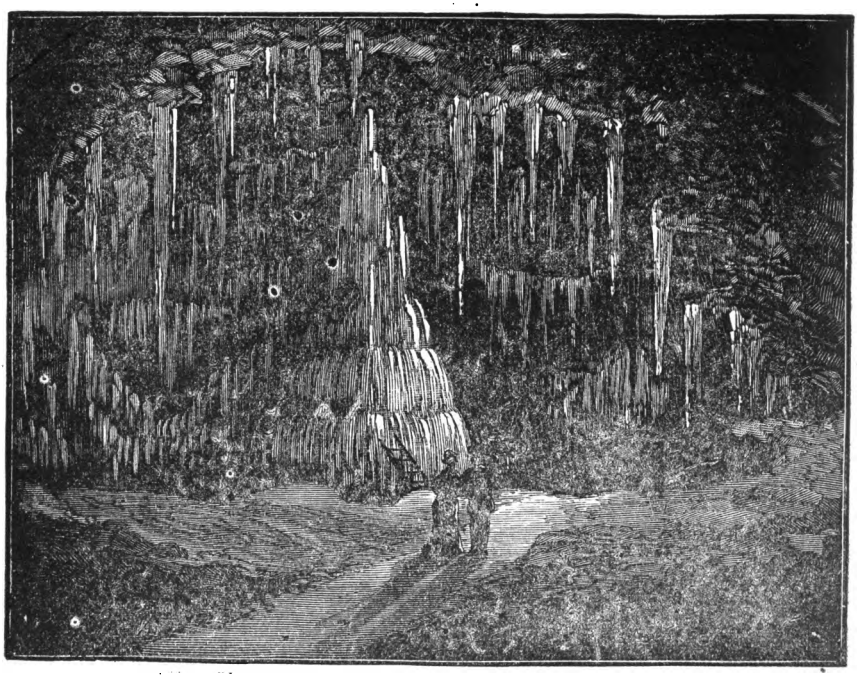
CONCLUSION.

It is a task of recognized difficulty to describe the indescribable. This difficulty is enhanced, if possible, in the case of cave scenery by the fact that the impressions it leaves upon the mind of the beholder differ not so much in degree as in kind from those of his past experience. A new order of sensations, ideas, and emotions demand, of course, a new vocabulary. No straining or expansion of a terminology derived from the upper world will enable it to describe adequately the wonderful phenomena presented in the realm of Stalacta. The visitor who attempts description must content himself therefore with seeking to impart his enthusiasm, without hoping to trace fully its causes. This only will he profess to understand clearly—that he has enjoyed the felicity of experiencing a sensation altogether novel.

The Persian monarch's desire—a new pleasure—is secured at length to the world in the Luray Cave.



FROZEN GEYSER.

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NOTICE TO VISITORS.

Visitors will avoid confusion or misunderstanding, and will guard against imposition, by paying particular attention to the following regulations:—

Charges at the Caverns.

ADMISSION: $1.00 each, between 7 A. M. and 6 P. M.
$1.50 each, after 6 P. M.

ELECTRIC LIGHT.—No charge is made for electric lights between 7 A. M. and 6 P. M. After 6 P. M. the following extra charge is made if electric lights are desired.

For ONE person	$2.00	In addition to $1.50 for Admission.
" TWO persons (each)	1.00	
" THREE " "	75 Cents.	
" FOUR " "	50 "	
" FIVE " "	25 "	

" SIX or more persons the electric light runs without charge.

Cave Photographs, Specimens, and Guide-books, &c., may be purchased at fixed prices.

☞No other charges than those specified are permitted.

In the Caverns.

Plain clothes and stout shoes should be worn in the Caverns. Ladies should wear overshoes. Extra wraps are not needed, as the Cave temperature is never more than 56° nor less than 54° F. at any season. Canes, sticks, &c., are not allowed in the Caverns, except when needed by the infirm. Smoking is prohibited.

☞Visitors are urgently requested to aid in protecting the formations in the Caverns from defacement and mutilation.

☞Under the laws of Virginia, persons breaking or defacing the formations may be arrested and fined.

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LETTER FROM "PORTE CRAYON."

(GENERAL DAVID H. STROTHER.)

Charleston, Jeff. Co., West Va.
November 21st, 1881.

My Dear Sir:

In my earlier days I explored a number of notable caverns, including the "Mammoth Cave" in Kentucky and "Wyers" in Virginia, and have since that time confined my observations to views above ground, under the belief that nature had no more subterranean surprises nor enchantments in store for me.

I must confess, however, that my recent visit to the Cave at Luray has been a new revelation, surpassing, as that does, all I had previously seen, in the richness and profusion of its ornamentation and its weird and dramitic effects, especially when illuminated by the electric light recently introduced. These effects are beyond the reach of descriptive art, and must be seen to be fully understood and and appreciated.

I am very truly yours,

DAVID H. STROTHER,

ROBERT R. CORSON, Esq.,
Luray, Page County, Va.

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